



Foreign Commerce Subcomm. on Transportation and Commerce

AVIATION SAFETY AND NOISE REDUCTION

ACT OF 1979

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HEARINGS BEFORE THE SUBCOMMITTEE ON TRANSPORTATION AND COMMERCE OF THE COMMITTEE ON INTERSTATE AND FOREIGN COMMERCE HOUSE OF REPRESENTATIVES NINETY-SIXTH CONGRESS

1000

FIRST SESSION

ON

H.R. 3942

A BILL TO PROVIDE ASSISTANCE TO AIRPORT OPERATORS
TO PREPARE AND CARRY OUT NOISE COMPATIBILITY PRO-
GRAMS, TO PROVIDE ASSISTANCE TO ASSURE CONTINUED
SAFETY IN AVIATION, AND FOR OTHER PURPOSES

JUNE 7, 12, AND 27, 1979

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Air Transport Association of America:

Fleming, J. Roger, director, environmental affairs.

von Kann, Clifton F., senior vice president of operations and airports.

Airport Operators Council International (AOCI):

Corbett, Jack, vice president.

Mayo, Markey, director, environmental programs.

Sattler, Karl R.

Association of Local Transport Airlines, Robert E. Ginther, president.

Boeing Commercial Airplane Co.:

Blumenthal, Vaughn L., director, noise and emission abatement programs.

Russell, Richard E., chief engineer, noise technology staff.

Delta Airlines, Inc.:

Callison, James W., senior vice president and general counsel.

Mayo, Gerald M., counsel, noise abatement issues.

Eastern Airlines, Inc., Paul M. Johnstone, senior vice president.

Environmental Protection Agency:

Elkins, Charles L., Deputy Assistant Administrator.

Schettino, John, Director, Technology and Federal Programs Division.

General Electric Co., William L. Rodenbaugh, manager, advanced strategic market and product plans development.

McDonnell Douglas Corp., Aubert L. McPike, director, industry association activities, Douglas Aircraft Co.

Maryland State Aviation Administration:

Bennett, David.

Sattler, Karl R., Administrator.

National Association of Noise Control Officials (NANCO), Jesse O. Borthwick, executive director.

National League of Cities:

McCarty, Kevin, Office of Federal Relations.

Rockenstein, Walter H., II.

National Organization To Insure a Sound-Controlled Environment:

Barnard, Herman, president.

Ferguson, William, executive director.

Northwest Airlines, Inc., Benjamin G. Griggs, Jr., vice president.

Port Authority of New York and New Jersey:

Mulhern, Francis, legal staff.

Sagner, Alan.

Wiesner, Mark, aviation staff.

Zinser, Richard, aviation staff.

Pratt & Whitney Aircraft Group, Gordon A. Titcomb, executive vice president, Commercial Products Division.

Runway 27 Coalition, Mona Thaler, coordinator.

Transportation, Department of:

Randall, Albert B., Chief, Legislative Staff, Office of the Chief Counsel, Federal Aviation Administration.

Taylor, Quentin S. C., Deputy Administrator, Federal Aviation Administration.

Wesler, John E., Acting Associate Administrator for Policy and International Affairs, Federal Aviation Administration.

AVIATION SAFETY AND NOISE REDUCTION ACT OF 1979

THURSDAY, JUNE 7, 1979

HOUSE OF REPRESENTATIVES,
SUBCOMMITTEE ON TRANSPORTATION AND COMMERCE,
COMMITTEE ON INTERSTATE AND FOREIGN COMMERCE,
Washington, D.C.

The subcommittee met at 9:30 a.m., pursuant to notice, in room 2237, Rayburn House Office Building, Hon. James J. Florio, chairman, presiding.

Mr. FLORIO. The Subcommittee on Transportation and Commerce will come to order. Today, as you know, we are going to be conducting the first of 3 days of hearings on H.R. 3942, the Aviation Safety and Noise Abatement Act of 1979. There are more than 6 million people living around airports whose lives are directly affected by aircraft noise. As anyone who lives near an airport, and I myself can identify with this very closely since I live in close proximity to Philadelphia National Airport, aircraft noise has a major impact on surrounding communities.

Such noise has a detrimental effect on peoples' health and the overall quality of life of those who are subjected to aircraft and airport noise, to say nothing of its adverse effect on property values in surrounding areas.

In the 1960's the Federal Government began a program to reduce noise levels around airports. That was done by the Federal Aviation Administration and later continued by FAA in consultation with EPA. The intent of the program was to reduce noise in a gradually controlled and cost effective way. Aircraft noise regulations were first proposed in 1969 and subsequent regulations have been issued over the years.

All these regulations are directed toward reducing noise levels without imposing a substantial burden on the airline industry.

During these hearings we will hear testimony from people living near airports, from airport operators, from airlines, and from aircraft manufacturers. We will see what burden the noise imposes, and we will attempt to ascertain what ways are most effective for reducing airport noise.

We obviously need an extensive air transportation system, but we need one that imposes a minimum amount of environmental damage upon the public.

I would like to take a moment to acknowledge the work of the Public Works Committee of this Congress which has been very active in the area of aircraft and airport noise. It has been involved in this subject for a great number of years. While the positions of

this committee have not always been the same as those of the Public Works Committee, we do recognize and acknowledge the leadership it has played in this field and look forward to cooperating with them to the fullest extent possible.

Without objection the text of H.R. 3942 will be printed at this point in the record.

[Testimony begins on p. 53.]

[The text of H.R. 3942 follows:]

96TH CONGRESS
1ST SESSION

H. R. 3942

[Report No. 96-203, Part I]

To provide assistance to airport operators to prepare and carry out noise compatibility programs, to provide assistance to assure continued safety in aviation, and for other purposes.

IN THE HOUSE OF REPRESENTATIVES

MAY 4, 1979

Mr. JOHNSON of California (for himself, Mr. ANDERSON of California, Mr. FARY, Mr. RAHALL, Mr. APPEGATE, Ms. FERRARO, Mr. BONER of Tennessee, and Mr. GOLDWATER) introduced the following bill; which was referred to the Committee on Public Works and Transportation

MAY 15, 1979

Delete sponsor: Ms. FERRARO (May 7, 1979)

MAY 15, 1979

Reported with an amendment, referred to the Committee on Interstate and Foreign Commerce for a period ending not later than June 5, 1979, for consideration of such portions of the bill and amendment as fall within its jurisdiction under clause 1(1), Rule X, and ordered to be printed

[Strike out all after the enacting clause and insert the part printed in italic]

A BILL

To provide assistance to airport operators to prepare and carry out noise compatibility programs, to provide assistance to assure continued safety in aviation, and for other purposes.

1 *Be it enacted by the Senate and House of Representa-*
2 *tives of the United States of America in Congress assembled,*
3 That this Act may be cited as the "Aviation Safety and
4 Noise Reduction Act".

5 **TITLE I**

6 **SEC. 101.** For purposes of this title—

7 (1) the term "airport" means any air carrier air-
8 port whose projects for airport development are eligible
9 for terminal development costs under section 20(b) of
10 the Airport and Airway Development Act of 1970 (49
11 U.S.C. 1720);

12 (2) the term "airport operator" means any person
13 holding a valid certificate issued pursuant to section
14 612 of the Federal Aviation Act of 1958 to operate an
15 airport; and

16 (3) the term "Secretary" means the Secretary of
17 Transportation.

18 **SEC. 102.** Not later than the last day of the sixth month
19 which begins after the date of enactment of this Act, the
20 Secretary, after consultation with the Administrator of the
21 Environmental Protection Agency and such other Federal,
22 State, and interstate agencies as he deems appropriate, shall
23 by regulation—

1 (1) establish a single system of measuring noise to
2 be uniformly applied in measuring the noise at airports
3 and the areas surrounding such airports;

4 (2) establish a single system for determining the
5 exposure of individuals to noise which results from the
6 operations of an airport and which includes, but is not
7 limited to, noise intensity, duration, frequency, and
8 time of occurrence; and

9 (3) identify land uses which are normally compati-
10 ble with various exposures of individuals to noise.

11 SEC. 102. (a)(1) After the effective date of the regula-
12 tions promulgated in accordance with section 102 of this
13 title, any airport operator of an airport may submit to the
14 Secretary a noise exposure map which sets forth, in accord-
15 ance with the regulations promulgated pursuant to section
16 102, the noncompatible uses in each area of the map, as of
17 the date of submission of such map, a description of the pro-
18 jected aircraft operations at such airport during 1985, and
19 the ways, if any, in which such operations will affect such
20 map.

21 (2) If, after the submission to the Secretary of a noise
22 exposure map under paragraph (1), any change in the oper-
23 ation of an airport would create any new noncompatible use
24 in any area surrounding such airport, the operator of such

1 airport shall submit a revised noise exposure map showing
2 such new noncompatible use.

3 (b)(1) Section 11 of the Airport and Airway Develop-
4 ment Act of 1970 (49 U.S.C. 1711) is amended by renumber-
5 ing paragraphs (6) through (21), and all references thereto, as
6 paragraphs (7) through (22), respectively, and by adding im-
7 mediately after paragraph (5) the following new paragraph:

8 “(6) ‘Airport noise compatibility planning’ means the
9 development for planning purposes of information necessary
10 to prepare and submit (A) the noise exposure map and related
11 information pursuant to section 103 of the Aviation Safety
12 and Noise Reduction Act, including any cost associated with
13 obtaining such information, and (B) a noise compatibility pro-
14 gram for approval by the Secretary pursuant to section
15 104(b)(1) of such Act.”

16 (2)(A) Section 13(a) of the Airport and Airway Develop-
17 ment Act of 1970 (49 U.S.C. 1713) is amended by—

18 (i) inserting “(1)” immediately before the first sen-
19 tence thereof; and

20 (ii) adding at the end thereof the following new
21 paragraph:

22 “(2) In order to promote the development of an effective
23 noise compatibility program, for fiscal years beginning after
24 September 30, 1970, the Secretary may make grants of
25 funds for noise compatibility planning to sponsors of air carri-

1 or airports whose projects for airport development are eligi-
2 ble for terminal development costs under section 20(b) of this
3 title.”

4 (B) Section 12(b) of such Act is amended to read as
5 follows:

6 “(b) AMOUNT AND LIMITATION OF GRANTS.—(1) The
7 award of grants under subsection (a)(1) of this section is sub-
8 ject to the following limitations:

9 “(A) The total funds obligated for grants under
10 subsection (a)(1) of this section may not exceed
11 \$150,000,000, and the amount obligated in any one
12 fiscal year may not exceed \$15,000,000.

13 “(B) The United States share of any airport
14 master planning grant under this section shall be that
15 per centum for which a project for airport development
16 at that airport would be eligible under section 17 of
17 this Act. In the case of any airport system planning
18 grant under this section, the United States share shall
19 be 75 per centum.

20 “(C) No more than 10 per centum of the funds
21 made available under this paragraph in any fiscal year
22 may be allocated for projects within a single State, the
23 Commonwealth of Puerto Rico, the Virgin Islands,
24 American Samoa, the Trust Territory of the Pacific Is-
25 lands, or Guam. Grants for projects encompassing an

1 area located in two or more States shall be charged to
2 each State in the proportion which the number of
3 square miles the project encompasses in each State
4 bears to the square miles encompassed by the entire
5 project.

6 ~~“(9)(A)~~ For the purpose of carrying out subsection (a)(2)
7 of this section, there is authorized to be appropriated, for
8 fiscal years ending on or after September 30, 1980, out of
9 the Airport and Airway Trust Fund, not to exceed
10 \$15,000,000.

11 ~~“(B)~~ The United States share of any airport noise com-
12 patibility planning grant under this section shall be that per-
13 centum for which a project for airport development at that
14 airport would be eligible under section 17 of this Act.”.

15 ~~SEC. 104. (a)(1)~~ Any airport operator who has submit-
16 ted a noise exposure map and the related information pursu-
17 ant to section 103(a)(1) may, after consultation with the offi-
18 cials of any unit of local government in the area surrounding
19 such airport, the Federal officials having local responsibility
20 for such airport, any air carrier using such airport, any re-
21 gional planning authority, and any metropolitan planning au-
22 thority, submit a noise compatibility program to the Secre-
23 tary for approval pursuant to subsection (b)(1) of this section.
24 Such program shall set forth the measures which such opera-
25 tor proposes for the reduction of existing noncompatible uses

1 and the prevention of the introduction of additional nonecom-
2 patible uses within the area covered by the noise exposure
3 map submitted by such operator. Such measures may include;
4 but are not limited to—

5 (A) the implementation of any preferential runway
6 system;

7 (B) the implementation of any restriction on the
8 use of such airport by any type or class of aircraft
9 based on the noise characteristics of such aircraft;

10 (C) the construction of barriers and acoustical
11 shielding, including the soundproofing of public build-
12 ings;

13 (D) the use of flight procedures to control the op-
14 eration of aircraft to reduce exposure of individuals to
15 noise in the area surrounding the airport; and

16 (E) acquisition of land and interests therein, in-
17 cluding, but not limited to, air rights, easements, and
18 development rights, so as to assure the use of property
19 for purposes which are compatible with airport oper-
20 ations.

21 (2) During the period beginning on the date of enact-
22 ment of this Act and ending on the day prior to the effective
23 date of the regulations promulgated in accordance with sec-
24 tion 102 of this Act, any airport operator may submit a noise

1 compatibility program to the Secretary for approval pursuant
2 to subsection (b)(2) of this section.

3 (b)(1) The Secretary shall approve or disapprove any
4 program submitted to him pursuant to subsection (a)(1) (other
5 than as such program relates to flight procedures referred to
6 in subsection (a)(1)(D) of this section) within one hundred and
7 eighty days after it is received by him. The Secretary shall
8 approve such program (other than as such program relates to
9 flight procedures referred to in subsection (a)(1)(D) of this
10 section) (A) if the measures to be undertaken in carrying out
11 such program (i) do not create an undue burden on interstate
12 or foreign commerce, and (ii) are reasonably consistent with
13 obtaining the goal of reducing existing noncompatible uses
14 and preventing the introduction of additional noncompatible
15 uses; and (B) if the program provides for its revision made
16 necessary by any revised noise exposure map submitted
17 under section 102(a)(2) of this title. Failure of the Secretary
18 to approve or disapprove such program (other than as such
19 program relates to flight procedures referred to in subsection
20 (a)(1)(D) of this section) within such time period shall be
21 deemed to be an approval of such program. With respect to
22 any part of such program which relates to such flight proce-
23 dures, the Secretary shall provide such part of such program
24 to the Administrator of the Federal Aviation Administration

1 who shall either approve or disapprove such part of such pro-
2 gram.

3 (2) The Secretary shall approve or disapprove any pro-
4 gram submitted to him pursuant to subsection (a)(2) of this
5 section (other than as such program relates to flight proce-
6 dures referred to in subsection (a)(1)(D) of this section) within
7 one hundred and eighty days after it is received by him. The
8 Secretary shall approve such program (other than as such
9 program relates to flight procedures referred to in subsection
10 (a)(1)(D) of this section) (A) if the measures to be undertaken
11 in carrying out such program (i) do not create an undue
12 burden on interstate or foreign commerce; and (ii) are sub-
13 stantially consistent with obtaining the goal of reducing exist-
14 ing noncompatible uses and preventing the introduction of
15 additional noncompatible uses; and (B) if the purposes of this
16 Act would be furthered by prompt implementation of such
17 program. With respect to any part of such program which
18 relates to such flight procedures, the Secretary shall provide
19 such part of such program to the Administrator of the Feder-
20 al Aviation Administration who shall either approve or disap-
21 prove such part of such program.

22 (c)(1) The Secretary is authorized to incur obligations to
23 make grants under this Act from funds made available under
24 subsection (d) of this section for any project to carry out a

1 noise compatibility program approved under subsection (b)(1)
2 of this section.

3 (2) In addition to obligations incurred under paragraph
4 (1) of this subsection, the Secretary is authorized to incur
5 obligations to make grants under this Act from funds made
6 available under subsection (d) of this section for any project
7 to carry out a noise compatibility program approved under
8 subsection (b)(2) of this section, except that the Secretary
9 may not incur any such obligation after the effective date of
10 the regulations promulgated in accordance with section 102
11 of this title.

12 (3) Grants under this Act may be made to operators of
13 airports submitting noise compatibility programs and to units
14 of local government in the area surrounding such airports if
15 the Secretary determines such units have the capability to
16 carry out projects for which grant applications are made in
17 accordance with such noise compatibility programs. The Fed-
18 eral share of any project for which a grant is made under this
19 subsection shall be 80 per centum of the cost of the project.
20 All of the provisions of the Airport and Airway Development
21 Act of 1970 applicable to grants made under that Act (except
22 section 17 of those provisions relating to apportionment) shall
23 be applicable to any grant made under this Act, unless the
24 Secretary determines that any provision of such Act of 1970

1 is inconsistent with, or unnecessary to carry out, the pur-
2 poses of this Act.

3 (d) The Secretary may obligate for expenditure out of
4 the Airport and Airway Trust Fund not to exceed
5 \$100,000,000 for the fiscal year ending September 30, 1980,
6 for making grants under subsection (c) of this section.

7 SEC. 105. The Secretary, acting through the Adminis-
8 trator of the Federal Aviation Administration, after consulta-
9 tion with the officials of any unit of local government in the
10 area surrounding such airport, shall prepare and publish a
11 noise exposure map and a noise compatibility program for the
12 airport established by the Act of June 20, 1940 (54 Stat.
13 686), and the airport the construction of which was author-
14 ized by the Act of September 7, 1950 (64 Stat. 770). Such
15 map and program shall be prepared and published in accord-
16 ance with the requirements of this Act no later than one year
17 after the effective date of the regulations promulgated in ac-
18 cordance with section 102 of this Act.

19 SEC. 106. Any noise exposure map submitted to, or pre-
20 pared by, the Secretary under this title and the list of land
21 uses identified by the Secretary under this title as those
22 which are normally compatible with various exposures of in-
23 dividuals to noise shall not be received in evidence in any
24 trial, hearing, or other proceeding in or before any court in
25 the United States.

1 Sec. 107. (a) No person who acquires property or an
2 interest therein after the date of enactment of this Act in an
3 area surrounding an airport with respect to which a noise
4 exposure map has been submitted under section 103 of this
5 title prior to the date of such acquisition shall be entitled to
6 recover damages with respect to the noise attributable to
7 such airport if such person had actual or constructive knowl-
8 edge of the existence of such noise exposure map unless, in
9 addition to any other elements for recovery of damages, such
10 person can show that—

11 (1) a significant change in the type or frequency
12 of aircraft operations at the airport; or
13 (2) a significant change in the airport layout; or
14 (3) a significant change in the flight patterns; or
15 (4) a significant increase in nighttime operations;
16 occurred after the date of the acquisition of such property or
17 interest therein and that the damages for which recovery is
18 sought have resulted from any such change or increase.

19 (b) For purposes of this section, constructive knowledge
20 shall be imputed, at a minimum, to any person who acquires
21 property or an interest therein in an area surrounding an
22 airport after the date of enactment of this Act if—

23 (1) prior to the date of such acquisition, notice of
24 the existence of a noise exposure map for such area
25 was published at least three times in a newspaper of

1 general circulation in the county in which such property is located; or

2 (2) a copy of such noise exposure map is furnished to such person at the time of such acquisition.

3 Sec. 108. The Secretary shall study (1) airport noise compatibility planning carried out with grants made under section 13 of the Airport and Airway Development Act of 1970, and (2) airport noise compatibility programs carried out with grants made under this title, to determine to what extent such planning and programs are achieving the goals of reducing existing noncompatible uses of land around airports and preventing the introduction of new noncompatible uses around airports. Not later than the last day of the eighteenth month which begins after the date of enactment of this Act, the Secretary shall submit a report to Congress setting forth the determinations made pursuant to such studies together with legislative recommendations, if any, which the Secretary determines necessary.

19 TITLE II

20 Sec. 201. Subsection (b) of section 13 of the Airport and Airway Development Act of 1970 (49 U.S.C. 1713(b)) is amended by adding at the end thereof the following new paragraph:

21 “(3) Notwithstanding subparagraphs (B) and (C) of paragraph (1) of this subsection, in the case of any grant of

1 funds under subsection (a) of this section to any planning
2 agency for airport system planning or to any public agency
3 for airport master planning for any populated coastal island
4 which (A) has a United States census population of not less
5 than one thousand five hundred, nor more than twenty-five
6 thousand; (B) is separated by approximately twenty miles of
7 water from the Atlantic, Pacific, or Gulf Coasts of the contig-
8 uous forty-eight States; (C) is located within a standard con-
9 solidated statistical area (as defined by the Bureau of the
10 Census) which has a population of five million or more and
11 which has one or more major hub airports located within
12 such area—

13 “(i) the Federal share shall be 100 per centum;
14 and

15 “(ii) the amount of such grant shall not be taken
16 into account in determining for the purposes of subpar-
17 agraph (C) of paragraph (1) of this subsection the per-
18 centage of the funds that have been allocated to any
19 State, the Commonwealth of Puerto Rico, the Virgin
20 Islands, American Samoa, the Trust Territory of the
21 Pacific Islands or Guam under this section.”.

22 SEC. 202. (a) Paragraph (3) of subsection (a) of section
23 14 of the Airport and Airway Development Act of 1970 (49
24 U.S.C. 1714) is amended by striking out “\$525,000,000 for

1 fiscal year 1980." and inserting in lieu thereof
2 "\$612,000,000 for fiscal year 1980."

3 (b) Paragraph (4) of subsection (a) of section 14 of the
4 Airport and Airway Development Act of 1970 is amended by
5 striking out "\$85,000,000 for fiscal year 1980." and insert-
6 ing in lieu thereof "\$98,000,000 for fiscal year 1980."

7 (c) The last sentence of paragraph (2) of subsection (b)
8 of section 14 of the Airport and Airway Development Act of
9 1970 is hereby repealed.

10 (d) Subsection (c) of section 14 of the Airport and
11 Airway Development Act of 1970 is amended by striking out
12 "and not less than \$250,000,000 per fiscal year for the fiscal
13 years 1977 through 1980." and inserting in lieu thereof "not
14 less than \$250,000,000 per fiscal year for the fiscal years
15 1977 through 1979, and not less than \$200,000,000 for
16 fiscal year 1980."

17 (e) Subsection (c) of section 14 of the Airport and
18 Airway Development Act of 1970 is amended by adding at
19 the end thereof the following new sentence: "If in fiscal year
20 1980, or in any subsequent fiscal year, the total amount obli-
21 gated under subsection (c) of this section in such fiscal year is
22 less than the minimum amount made available for obligation
23 under such subsection for such fiscal year, the amount availa-
24 ble for obligation or expenditure as determined under the pro-
25 coding sentence of this subsection shall be reduced by an

1 amount equal to the difference between the amount made
2 available under subsection (c) for such fiscal year and the
3 total amount obligated under such subsection (c) for such
4 fiscal year."

5 SEC. 203: (a) Paragraph (4) of subsection (a) of section
6 15 of the Airport and Airway Development Act of 1970 (49
7 U.S.C. 1715(a)(4)) is amended by striking out "minus
8 \$15,000,000 in the case of each of the fiscal years 1977
9 through 1980," and inserting in lieu thereof "minus
10 \$15,000,000 in the case of each of the fiscal years 1977
11 through 1979, and minus \$20,000,000 in the case of fiscal
12 year 1980,"

13 (b) Paragraph (4) of subsection (a) of section 15 of the
14 Airport and Airway Development Act of 1970 is further
15 amended by striking out "and \$15,000,000 of the amount
16 made available for each of the other fiscal years" and insert-
17 ing in lieu thereof "\$15,000,000 of the amount made availa-
18 ble for each of the fiscal years 1977 through 1979, and
19 \$20,000,000 of the amount made available for fiscal year
20 1980".

21 SEC. 204: Paragraph (2)(A) of subsection (a) of section
22 17 of the Airport and Airway Development Act of 1970 (49
23 U.S.C. 1717) is amended by striking out "1977 and 1978,
24 and shall be 80 per centum of the allowable project costs in

1 the case of grants from funds for fiscal years 1979 and
2 1980," and inserting in lieu thereof "1977 through 1980".

3 SEC. 205. Part II of the Airport and Airway Develop-
4 ment Act of 1970 (49 U.S.C. 1711 et seq.) is amended by
5 adding at the end thereof the following new section:

6 "SEC. 21. Notwithstanding any other provision of this
7 title, no airport development project involving the construc-
8 tion or extension of any runway may be approved by the
9 Secretary at any general aviation airport located astride a
10 line separating two counties within a single State if, before
11 the submission of such project to the Secretary, such project
12 has not been approved by the governing body of any village
13 incorporated under the laws of that State which is located
14 entirely within five miles of the nearest boundary of such
15 airport."

16 SEC. 206. (a) The Secretary of Transportation shall
17 construct a control tower at a point which is at latitude 40
18 degrees, 42 minutes, 45 seconds north and at longitude 73
19 degrees, 24 minutes, 50 seconds west.

20 (b) There is authorized to be appropriated to carry out
21 this section for fiscal years beginning after September 30,
22 1970, not to exceed \$800,000.

23 TITLE III

24 SEC. 301. For purposes of this title—

(1) the term "noncomplying aircraft" means any civil subsonic turbojet powered aircraft (A) which (i) has a maximum certificated takeoff weight of seventy-five thousand pounds or more; (ii) in the case of an aircraft which is registered in the United States; has a standard airworthiness certificate issued pursuant to section 608(e) of the Federal Aviation Act of 1958 (40 U.S.C. 1428); and (iii) as determined by the Civil Aeronautics Board; was in service on January 24, 1977; and (B) which does not comply with the noise standards prescribed for new subsonic aircraft in regulations issued by the Secretary, acting through the Administrator of the Federal Aviation Administration (14 CFR part 36); as such regulations were in effect on January 1, 1977;

(2) the term "retrofit" means the alteration of the engine or the engine nacelles of an aircraft with sound-absorbent materials for the purpose of noise reduction; and

(3) the term "Secretary" means the Secretary of Transportation.

SEC. 302. (a) If, by January 1, 1980, the International Civil Aviation Organization (hereafter referred to as ICAO) does not reach an agreement (1) which adopts the noise standards prescribed for new subsonic aircraft in regulations

1 issued by the Secretary, acting through the Administrator of
2 the Federal Aviation Administration (14 CFR part 36), as
3 such regulations were in effect on January 1, 1977, or (2) on
4 noise standards and an international schedule for compliance
5 with ICAO Noise Standards (annex 16) which are reasonably
6 compatible with the standards set forth in such regulations
7 issued by the Secretary (14 CFR part 36); the Secretary,
8 acting through the Administrator, shall, by May 1, 1980,
9 issue a rule requiring all aircraft being operated by air carri-
10 ers, and foreign air carriers, in foreign air transportation to
11 comply with the noise standards set forth in such regulations
12 (14 CFR part 36) during the five-year period after the effec-
13 tive date of such regulation, at a phased rate of compliance
14 similar to that in effect for aircraft registered in the United
15 States. The requirement applied to air carriers engaging in
16 foreign air transportation shall not be any more stringent
17 than those applied to foreign air carriers.

18 (b) If, by January 1, 1980, the ICAO reaches an agree-
19 ment on noise standards that complies with clause (1) or (2)
20 of subsection (a) of this section, within one hundred and
21 twenty days after such date, the Secretary, acting through
22 the Administrator of the Federal Aviation Administration,
23 shall immediately issue a rule to require all noncomplying
24 aircraft being operated by air carriers engaging in foreign air
25 transportation to comply with the noise standards set forth in

1 such agreement at a phased rate of compliance similar to that
2 in effect for aircraft registered in the United States. The re-
3 quirement applied to air carriers engaging in foreign air
4 transportation shall not be more stringent than those applied
5 to foreign air carriers.

6 SEC. 303. Not later than the last day of the twelfth
7 month which begins after the date of enactment of this Act,
8 the Secretary shall issue regulations which provide that after
9 a date determined by the Secretary and set forth in such
10 regulations, the Secretary shall not issue an original airwor-
11 thiness certificate pursuant to section 603(e) of the Federal
12 Aviation Act of 1958 for any civil subsonic turbojet-powered
13 aircraft which has a maximum certificated takeoff weight of
14 seventy-five thousand pounds or more unless such aircraft
15 meets, at a minimum, the noise standards for new type cer-
16 tificated aircraft set forth in regulations issued by the Secre-
17 tary, acting through the Administrator, on March 2, 1978
18 (FR, vol. 43, p. 8722 et seq.). The regulations issued pursu-
19 ant to this section shall not apply to the issuance of an origi-
20 nal airworthiness certificate for such aircraft if an agreement
21 for the purchase of such aircraft was entered into prior to
22 May 1, 1970.

23 SEC. 304. Notwithstanding any other provision of law,
24 or any rule or regulation issued pursuant thereto, the Secre-
25 tary shall authorize any air carrier to operate all noncomply-

1 ing two-engine aircraft of such air carrier beyond the date by
2 which such aircraft are to be in compliance with noise stand-
3 ards applicable to those aircraft in regulations issued by the
4 Secretary, acting through the Administrator of the Federal
5 Aviation Administration (14 CFR part 36), as such regula-
6 tions were in effect on January 1, 1977, by waiving the ap-
7 plication of such regulations to such aircraft if such aircraft
8 are used exclusively in air carrier service between points
9 within the State of Hawaii.

10

TITLE IV

11 SEC. 401. Not later than ninety days after the date of
12 enactment of this Act, and each January 31 thereafter, until
13 implementation of collision avoidance systems in the national
14 air traffic control system, the Secretary of Transportation
15 shall submit to the Congress a report on the status of the
16 development of such systems. Such reports shall set forth
17 proposed timetables for the implementation of such systems.
18 The Secretary of Transportation's report shall include pro-
19 posals for any legislation needed to implement such systems.
20 That this Act may be cited as the "Aviation Safety and
21 Noise Reduction Act".

22

TITLE I

23 SEC. 101. For purposes of this title—

24 (1) the term "airport" means any air carrier air-
25 port whose projects for airport development are eligible

1 *for terminal development costs under section 20(b) of*
2 *the Airport and Airway Development Act of 1970 (49*
3 *U.S.C. 1720);*

4 *(2) the term "airport operator" means any person*
5 *holding a valid certificate issued pursuant to section*
6 *612 of the Federal Aviation Act of 1958 to operate an*
7 *airport; and*

8 *(3) the term "Secretary" means the Secretary of*
9 *Transportation.*

10 *SEC. 102. Not later than the last day of the sixth month*
11 *which begins after the date of enactment of this Act, the Sec-*
12 *retary, after consultation with the Administrator of the Envi-*
13 *ronmental Protection Agency and such other Federal, State,*
14 *and interstate agencies as he deems appropriate, shall by reg-*
15 *ulation—*

16 *(1) establish a single system of measuring noise*
17 *to be uniformly applied in measuring the noise at air-*
18 *ports and the areas surrounding such airports;*

19 *(2) establish a single system for determining the*
20 *exposure of individuals to noise which results from the*
21 *operations of an airport and which includes, but is not*
22 *limited to, noise intensity, duration, frequency, and*
23 *time of occurrence; and*

24 *(3) identify land uses which are normally com-*
25 *ppatible with various exposures of individuals to noise.*

1 *SEC. 103. (a)(1) After the effective date of the regula-*
2 *tions promulgated in accordance with section 102 of this title,*
3 *any airport operator of an airport may submit to the Secre-*
4 *tary a noise exposure map which sets forth, in accordance*
5 *with the regulations promulgated pursuant to section 102, the*
6 *noncompatible uses in each area of the map, as of the date of*
7 *submission of such map, a description of the projected air-*
8 *craft operations at such airport during 1985, and the ways, if*
9 *any, in which such operations will affect such map.*

10 *(2) If, after the submission to the Secretary of a noise*
11 *exposure map under paragraph (1), any change in the oper-*
12 *ation of an airport would create any new noncompatible use*
13 *in any area surrounding such airport, the operator of such*
14 *airport shall submit a revised noise exposure map showing*
15 *such new noncompatible use.*

16 *(b)(1) Section 11 of the Airport and Airway Develop-*
17 *ment Act of 1970 (49 U.S.C. 1711) is amended by renum-*
18 *bering paragraphs (6) through (21), and all references there-*
19 *to, as paragraphs (7) through (22), respectively, and by*
20 *adding immediately after paragraph (5) the following new*
21 *paragraph:*

22 *"(6) 'Airport noise compatibility planning' means the*
23 *development for planning purposes of information necessary*
24 *to prepare and submit (A) the noise exposure map and relat-*
25 *ed information pursuant to section 103 of the Aviation*

1 *Safety and Noise Reduction Act, including any cost associ-*
2 *ated with obtaining such information, and (B) a noise com-*
3 *patibility program for approval by the Secretary pursuant to*
4 *section 104(b)(1) of such Act."*

5 (2)(A) *Section 13(a) of the Airport and Airway Devel-*
6 *opment Act of 1970 (49 U.S.C. 1713) is amended by—*

7 (i) *inserting "(1)" immediately before the first*
8 *sentence thereof; and*

9 (ii) *adding at the end thereof the following new*
10 *paragraph:*

11 "(2) *In order to promote the development of an effective*
12 *noise compatibility program, for fiscal years beginning after*
13 *September 30, 1979, the Secretary may make grants of*
14 *funds for noise compatibility planning to sponsors of air car-*
15 *rier airports whose projects for airport development are eligi-*
16 *ble for terminal development costs under section 20(b) of this*
17 *title."*

18 (B) *Section 13(b) of such Act is amended to read as*
19 *follows:*

20 "(b) *AMOUNT AND LIMITATION OF GRANTS.—(1) The*
21 *award of grants under subsection (a)(1) of this section is*
22 *subject to the following limitations:*

23 (A) *The total funds obligated for grants under*
24 *subsection (a)(1) of this section may not exceed*

1 *\$150,000,000, and the amount obligated in any one*
2 *fiscal year may not exceed \$15,000,000.*

3 *“(B) The United States share of any airport*
4 *master planning grant under this section shall be that*
5 *per centum for which a project for airport development*
6 *at that airport would be eligible under section 17 of*
7 *this Act. In the case of any airport system planning*
8 *grant under this section, the United States share shall*
9 *be 75 per centum.*

10 *“(C) No more than 10 per centum of the funds*
11 *made available under this paragraph in any fiscal*
12 *year may be allocated for projects within a single*
13 *State, the Commonwealth of Puerto Rico, the Virgin*
14 *Islands, American Samoa, the Trust Territory of the*
15 *Pacific Islands, or Guam. Grants for projects encom-*
16 *passing an area located in two or more States shall be*
17 *charged to each State in the proportion which the*
18 *number of square miles the project encompasses in*
19 *each State bears to the square miles encompassed by*
20 *the entire project.*

21 *“(2)(A) For the purpose of carrying out subsection*
22 *(a)(2) of this section, there is authorized to be appropriated,*
23 *for fiscal years ending on or after September 30, 1980, out of*
24 *the Airport and Airway Trust Fund, not to exceed*
25 *\$15,000,000.*

1 “(B) The United States share of any airport noise com-
2 patibility planning grant under this section shall be that per
3 centum for which a project for airport development at that
4 airport would be eligible under section 17 of this Act.”

5 SEC. 104. (a)(1) Any airport operator who has submit-
6 ted a noise exposure map and the related information pursu-
7 ant to section 103(a)(1) may, after consultation with the offi-
8 cials of any unit of local government in the area surrounding
9 such airport, the Federal officials having local responsibility
10 for such airport, any air carrier using such airport, any re-
11 gional planning authority, and any metropolitan planning
12 authority, submit a noise compatibility program to the Secre-
13 tary for approval pursuant to subsection (b)(1) of this sec-
14 tion. Such program shall set forth the measures which such
15 operator proposes for the reduction of existing noncompatible
16 uses and the prevention of the introduction of additional non-
17 compatible uses within the area covered by the noise exposure
18 map submitted by such operator. Such measures may in-
19 clude, but are not limited to—

20 (A) the implementation of any preferential
21 runway system;

22 (B) the implementation of any restriction on the
23 use of such airport by any type or class of aircraft
24 based on the noise characteristics of such aircraft;

1 (C) the construction of barriers and acoustical
2 shielding, including the soundproofing of public build-
3 ings;

4 (D) the use of flight procedures to control the op-
5 eration of aircraft to reduce exposure of individuals to
6 noise in the area surrounding the airport; and

7 (E) acquisition of land and interests therein, in-
8 cluding, but not limited to, air rights, easements, and
9 development rights, so as to assure the use of property
10 for purposes which are compatible with airport oper-
11 ations.

12 (2) During the period beginning on the date of enact-
13 ment of this Act and ending on the day prior to the effective
14 date of the regulations promulgated in accordance with sec-
15 tion 102 of this Act, any airport operator may submit a noise
16 compatibility program to the Secretary for approval pursuant
17 to subsection (b)(2) of this section.

18 (b)(1) The Secretary, after consultation with the Ad-
19 ministrator of the Environmental Protection Agency, shall
20 approve or disapprove any program submitted to him pursu-
21 ant to subsection (a)(1) (other than as such program relates
22 to flight procedures referred to in subsection (a)(1)(D) of this
23 section) within one hundred and eighty days after it is re-
24 ceived by him. The Secretary shall approve such program
25 (other than as such program relates to flight procedures re-

1 *ferred to in subsection (a)(1)(D) of this section) (A) if the*
2 *measures to be undertaken in carrying out such program (i)*
3 *do not create an undue burden on interstate or foreign com-*
4 *merce, and (ii) are reasonably consistent with obtaining the*
5 *goal of reducing existing noncompatible uses and preventing*
6 *the introduction of additional noncompatible uses, and (B) if*
7 *the program provides for its revision made necessary by any*
8 *revised noise exposure map submitted under section*
9 *103(a)(2) of this title. Failure of the Secretary to approve or*
10 *disapprove such program (other than as such program relates*
11 *to flight procedures referred to in subsection (a)(1)(D) of this*
12 *section) within such time period shall be deemed to be an*
13 *approval of such program. With respect to any part of such*
14 *program which relates to such flight procedures, the Secre-*
15 *tary shall provide such part of such program to the Adminis-*
16 *trator of the Federal Aviation Administration who shall*
17 *either approve or disapprove such part of such program.*

18 *(2) The Secretary, after consultation with the Adminis-*
19 *trator of the Environmental Protection Agency, shall approve*
20 *or disapprove any program submitted to him pursuant to sub-*
21 *section (a)(2) of this section (other than as such program*
22 *relates to flight procedures referred to in subsection (a)(1)(D)*
23 *of this section) within one hundred and eighty days after it is*
24 *received by him. The Secretary shall approve such program*
25 *(other than as such program relates to flight procedures re-*

1 *ferred to in subsection (a)(1)(D) of this section) (A) if the*
2 *measures to be undertaken in carrying out such program (i)*
3 *do not create an undue burden on interstate or foreign com-*
4 *merce, and (ii) are substantially consistent with obtaining*
5 *the goal of reducing existing noncompatible uses and prevent-*
6 *ing the introduction of additional noncompatible uses, and*
7 *(B) if the purposes of this Act would be furthered by prompt*
8 *implementation of such program. With respect to any part of*
9 *such program which relates to such flight procedures, the*
10 *Secretary shall provide such part of such program to the Ad-*
11 *ministrator of the Federal Aviation Administration who shall*
12 *either approve or disapprove such part of such program.*

13 *(c)(1) The Secretary is authorized to incur obligations*
14 *to make grants under this Act from funds made available*
15 *under subsection (d) of this section for any project to carry*
16 *out a noise compatibility program approved under subsection*
17 *(b)(1) of this section.*

18 *(2) In addition to obligations incurred under paragraph*
19 *(1) of this subsection, the Secretary is authorized to incur*
20 *obligations to make grants under this Act from funds made*
21 *available under subsection (d) of this section for any project*
22 *to carry out a noise compatibility program approved under*
23 *subsection (b)(2) of this section, except that the Secretary*
24 *may not incur any such obligation after the effective date of*

1 *the regulations promulgated in accordance with section 102*
2 *of this title.*

3 (3) *Grants under this Act may be made to operators of*
4 *airports submitting noise compatibility programs and to*
5 *units of local government in the area surrounding such air-*
6 *ports if the Secretary determines such units have the capabil-*
7 *ity to carry out projects for which grant applications are*
8 *made in accordance with such noise compatibility programs.*
9 *The Federal share of any project for which a grant is made*
10 *under this subsection shall be 80 per centum of the cost of the*
11 *project. All of the provisions of the Airport and Airway De-*
12 *velopment Act of 1970 applicable to grants made under that*
13 *Act (except section 17 of those provisions relating to appor-*
14 *tionment) shall be applicable to any grant made under this*
15 *Act, unless the Secretary determines that any provision of*
16 *such Act of 1970 is inconsistent with, or unnecessary to*
17 *carry out, the purposes of this Act.*

18 (d) *The Secretary may obligate for expenditure out of*
19 *the Airport and Airway Trust Fund not to exceed*
20 *\$100,000,000 for the fiscal year ending September 30, 1980,*
21 *for making grants under subsection (c) of this section.*

22 SEC. 105. *The Secretary, acting through the Adminis-*
23 *trator of the Federal Aviation Administration, after consulta-*
24 *tion with the officials of any unit of local government in the*
25 *area surrounding such airport, shall prepare and publish a*

1 noise exposure map and a noise compatibility program for
2 the airport established by the Act of June 29, 1940 (54 Stat.
3 686), and the airport the construction of which was author-
4 ized by the Act of September 7, 1950 (64 Stat. 770). Such
5 map and program shall be prepared and published in accord-
6 ance with the requirements of this Act no later than one year
7 after the effective date of the regulations promulgated in ac-
8 cordance with section 102 of this Act.

9 *SEC. 106.* Any noise exposure map submitted to, or pre-
10 pared by, the Secretary under this title and the list of land
11 uses identified by the Secretary under this title as those
12 which are normally compatible with various exposures of in-
13 dividuals to noise shall not be received in evidence in any
14 trial, hearing, or other proceeding in or before any court in
15 the United States.

16 *SEC. 107. (a)* No person who acquires property or an
17 interest therein after the date of enactment of this Act in an
18 area surrounding an airport with respect to which a noise
19 exposure map has been submitted under section 103 of this
20 title prior to the date of such acquisition shall be entitled to
21 recover damages with respect to the noise attributable to such
22 airport if such person had actual or constructive knowledge of
23 the existence of such noise exposure map unless, in addition
24 to any other elements for recovery of damages, such person
25 can show that—

1 (1) a significant change in the type or frequency
2 of aircraft operations at the airport; or

3 (2) a significant change in the airport layout; or

4 (3) a significant change in the flight patterns; or

5 (4) a significant increase in nighttime operations;

6 occurred after the date of the acquisition of such property or
7 interest therein and that the damages for which recovery is
8 sought have resulted from any such change or increase.

9 (b) For purposes of this section, constructive knowledge
10 shall be imputed, at a minimum, to any person who acquires
11 property or an interest therein in an area surrounding an
12 airport after the date of enactment of this Act if—

13 (1) prior to the date of such acquisition, notice of
14 the existence of a noise exposure map for such area
15 was published at least three times in a newspaper of
16 general circulation in the county in which such proper-
17 ty is located; or

18 (2) a copy of such noise exposure map is fur-
19 nished to such person at the time of such acquisition.

20 SEC. 108. The Secretary shall study (1) airport noise
21 compatibility planning carried out with grants made under
22 section 13 of the Airport and Airway Development Act of
23 1970, and (2) airport noise compatibility programs carried
24 out with grants made under this title, to determine to what
25 extent such planning and programs are achieving the goals of

1 *reducing existing noncompatible uses of land around airports*
2 *and preventing the introduction of new noncompatible uses*
3 *around airports. Not later than the last day of the eighteenth*
4 *month which begins after the date of enactment of this Act,*
5 *the Secretary shall submit a report to Congress setting forth*
6 *the determinations made pursuant to such studies together*
7 *with legislative recommendations, if any, which the Secre-*
8 *tary determines necessary.*

9 *TITLE II*

10 *SEC. 201. Subsection (b) of section 13 of the Airport*
11 *and Airway Development Act of 1970 (49 U.S.C. 1713(b))*
12 *is amended by adding at the end thereof the following new*
13 *paragraph:*

14 *“(3) Notwithstanding subparagraphs (B) and (C) of*
15 *paragraph (1) of this subsection, in the case of any grant of*
16 *funds under subsection (a) of this section to any planning*
17 *agency for airport system planning or to any public agency*
18 *for airport master planning for any populated coastal island*
19 *which (A) has a United States census population of not less*
20 *than one thousand five hundred, nor more than twenty-five*
21 *thousand, (B) is separated by approximately twenty miles of*
22 *water from the Atlantic, Pacific, or Gulf Coasts of the con-*
23 *tiguous forty-eight States, (C) is located within a standard*
24 *consolidated statistical area (as defined by the Bureau of the*
25 *Census) which has a population of five million or more and*

1 *which has one or more major hub airports located within*
 2 *such area—*

3 “(i) *the Federal share shall be 100 per centum;*
 4 *and*

5 “(ii) *the amount of such grant shall not be taken*
 6 *into account in determining for the purposes of subpar-*
 7 *agraph (C) of paragraph (1) of this subsection the per-*
 8 *centage of the funds that have been allocated to any*
 9 *State, the Commonwealth of Puerto Rico, the Virgin*
 10 *Islands, American Samoa, the Trust Territory of the*
 11 *Pacific Islands, or Guam under this section.”.*

12 *SEC. 202. (a) Paragraph (3) of subsection (a) of section*
 13 *14 of the Airport and Airway Development Act of 1970 (49*
 14 *U.S.C. 1714) is amended by striking out “\$525,000,000 for*
 15 *fiscal year 1980.” and inserting in lieu thereof*
 16 *“\$612,000,000 for fiscal year 1980.”.*

17 *(b) Paragraph (4) of subsection (a) of section 14 of the*
 18 *Airport and Airway Development Act of 1970 is amended by*
 19 *striking out “\$85,000,000 for fiscal year 1980.” and insert-*
 20 *ing in lieu thereof “\$98,000,000 for fiscal year 1980.”.*

21 *(c) The last sentence of paragraph (2) of subsection (b)*
 22 *of section 14 of the Airport and Airway Development Act of*
 23 *1970 is hereby repealed.*

24 *(d) Subsection (c) of section 14 of the Airport and*
 25 *Airway Development Act of 1970 is amended by striking out*

1 "and not less than \$250,000,000 per fiscal year for the fiscal
2 years 1977 through 1980." and inserting in lieu thereof "not
3 less than \$250,000,000 per fiscal year for the fiscal years
4 1977 through 1979, and not less than \$300,000,000 for
5 fiscal year 1980."

6 (e) Subsection (e) of section 14 of the Airport and
7 Airway Development Act of 1970 is amended by adding at
8 the end thereof the following new sentence: "If in fiscal year
9 1980, or in any subsequent fiscal year, the total amount obli-
10 gated under subsection (c) of this section in such fiscal year
11 is less than the minimum amount made available for obliga-
12 tion under such subsection for such fiscal year, the amount
13 available for obligation or expenditure as determined under
14 the preceding sentence of this subsection shall be reduced by
15 an amount equal to the difference between the amount made
16 available under subsection (c) for such fiscal year and the
17 total amount obligated under such subsection (c) for such
18 fiscal year."

19 SEC. 203. (a) Paragraph (4) of subsection (a) of section
20 15 of the Airport and Airway Development Act of 1970 (49
21 U.S.C. 1715(a)(4)) is amended by striking out "minus
22 \$15,000,000 in the case of each of the fiscal years 1977
23 through 1980," and inserting in lieu thereof "minus
24 \$15,000,000 in the case of each of the fiscal years 1977

1 through 1979, and minus \$20,000,000 in the case of fiscal
2 year 1980,".

3 (b) Paragraph (4) of subsection (a) of section 15 of the
4 Airport and Airway Development Act of 1970 is further
5 amended by striking out "and \$15,000,000 of the amount
6 made available for each of the other fiscal years" and insert-
7 ing in lieu thereof "\$15,000,000 of the amount made availa-
8 ble for each of the fiscal years 1977 through 1979, and
9 \$20,000,000 of the amount made available for fiscal year
10 1980".

11 SEC. 204. Paragraph (2)(A) of subsection (a) of section
12 17 of the Airport and Airway Development Act of 1970 (49
13 U.S.C. 1717) is amended by striking out "1977 and 1978,
14 and shall be 80 per centum of the allowable project costs in
15 the case of grants from funds for fiscal years 1979 and
16 1980," and inserting in lieu thereof "1977 through 1980".

17 SEC. 205. Part II of the Airport and Airway Develop-
18 ment Act of 1970 (49 U.S.C. 1711 et seq.) is amended by
19 adding at the end thereof the following new section:

20 "SEC. 31. PRIOR APPROVAL OF PROJECTS.

21 "Notwithstanding any other provision of this title, no
22 airport development project involving the construction or ex-
23 tension of any runway may be approved by the Secretary at
24 any general aviation airport located astride a line separating
25 two counties within a single State if, before the submission of

1 *such project to the Secretary, such project has not been ap-*
2 *proved by the governing body of any village incorporated*
3 *under the laws of that State which is located entirely within*
4 *five miles of the nearest boundary of such airport."*

5 *SEC. 206. (a) The Secretary of Transportation shall*
6 *construct a control tower at a point which is at latitude 40*
7 *degrees, 43 minutes, 45 seconds north and at longitude 73*
8 *degrees, 24 minutes, 50 seconds west.*

9 *(b) There is authorized to be appropriated from the Air-*
10 *port and Airway Trust Fund for fiscal years beginning after*
11 *September 30, 1979, such funds as may be necessary to*
12 *carry out this section not to exceed \$800,000.*

13 *SEC. 207. (a) The Secretary of Transportation shall*
14 *obligate the funds necessary to complete all pending airport*
15 *development projects at Baudette International Airport, Bau-*
16 *dette, Minnesota.*

17 *(b) There is authorized to be appropriated from the Air-*
18 *port and Airway Trust Fund for fiscal years beginning after*
19 *September 30, 1979, such funds as may be necessary to*
20 *carry out this section not to exceed \$2,000,000.*

21 *SEC. 208. (a) The Secretary of Transportation shall*
22 *obligate the funds necessary to complete all pending airport*
23 *development projects at Floyd W. Jones-Lebanon, Missouri,*
24 *Airport, Lebanon, Missouri.*

1 ***(b) There is authorized to be appropriated from the Air-***
2 ***port and Airway Trust Fund for fiscal years beginning after***
3 ***September 30, 1979, such funds as may be necessary to***
4 ***carry out this section not to exceed \$700,000.***

5 ***SEC. 209. (a) The Secretary of Transportation shall***
6 ***install a full instrument landing system on runway 23L at***
7 ***Detroit Willow Run Airport, Ypsilanti, Michigan.***

8 ***(b) There is authorized to be appropriated from the Air-***
9 ***port and Airway Trust Fund for fiscal years beginning after***
10 ***September 30, 1979, such funds as may be necessary to***
11 ***carry out this section not to exceed \$500,000.***

12 ***SEC. 210. (a) The Secretary of Transportation shall***
13 ***obligate the funds necessary to complete all pending airport***
14 ***development projects at Greenville Municipal Airport,***
15 ***Greenville, Alabama.***

16 ***(b) There is authorized to be appropriated from the Air-***
17 ***port and Airway Trust Fund for fiscal years beginning after***
18 ***September 30, 1979, such funds as may be necessary to***
19 ***carry out this section not to exceed \$500,000.***

20 ***SEC. 211. (a) The Secretary of Transportation shall***
21 ***obligate the funds necessary for the construction of a new***
22 ***runway at the Slidell Airport, Slidell, Louisiana.***

23 ***(b) There is authorized to be appropriated from the Air-***
24 ***port and Airway Trust Fund for fiscal years beginning after***

1 September 30, 1979, such funds as may be necessary to
2 carry out this section not to exceed \$1,350,000.

3 SEC. 212. Part II of the Airport and Airway Develop-
4 ment Act of 1970 (49 U.S.C. 1701 et seq.) is amended by
5 adding at the end thereof the following new section:

6 "SEC. 32. AVIATION NOISE HEALTH EVALUATION.

7 "The Secretary shall carry out research projects on the
8 health implications of aviation noise. There is authorized to
9 be appropriated, out of the Airport and Airway Trust Fund,
10 not to exceed \$10,000,000 for the fiscal year ending Septem-
11 ber 30, 1980, to carry out this section."

12 TITLE III

13 SEC. 301. For purposes of this title—

14 (1) the term "airport operator" means any person
15 holding a valid certificate issued pursuant to section
16 612 of the Federal Aviation Act of 1958 to operate an
17 airport;

18 (2) the term "noncomplying aircraft" means any
19 civil subsonic turbojet powered aircraft (A) which (i)
20 has a maximum certificated takeoff weight of seventy-
21 five thousand pounds or more, (ii) in the case of an
22 aircraft which is registered in the United States, has a
23 standard airworthiness certificate issued pursuant to
24 section 603(c) of the Federal Aviation Act of 1958 (49
25 U.S.C. 1423), and (iii) as determined by the Civil

1 *Aeronautics Board, was in service on January 24,*
2 *1977, and (B) which does not comply with the noise*
3 *standards prescribed for new subsonic aircraft in regu-*
4 *lations issued by the Secretary, acting through the Ad-*
5 *ministrator of the Federal Aviation Administration (14*
6 *CFR part 36), as such regulations were in effect on*
7 *January 1, 1977; and*

8 *(3) the term "Secretary" means the Secretary of*
9 *Transportation.*

10 *SEC. 302. (a) If, by January 1, 1980, the Internation-*
11 *al Civil Aviation Organization (hereafter referred to as*
12 *ICAO) does not reach an agreement (1) which adopts the*
13 *noise standards prescribed for new subsonic aircraft in regu-*
14 *lations issued by the Secretary, acting through the Adminis-*
15 *trator of the Federal Aviation Administration (14 CFR part*
16 *36), as such regulations were in effect on January 1, 1977,*
17 *or (2) on noise standards and an international schedule for*
18 *compliance with ICAO Noise Standards (annex 16) which*
19 *are substantially compatible with the standards set forth in*
20 *such regulations issued by the Secretary (14 CFR part 36),*
21 *the Secretary, acting through the Administrator, shall, by*
22 *May 1, 1980, issue a rule requiring all aircraft being operat-*
23 *ed by air carriers, and foreign air carriers, in foreign air*
24 *transportation to comply with the noise standards set forth in*
25 *such regulations (14 CFR part 36) during the five-year*

1 *period after the effective date of such regulation, at a phased*
2 *rate of compliance similar to that in effect for aircraft regis-*
3 *tered in the United States. The requirement applied to air*
4 *carriers engaging in foreign air transportation shall not be*
5 *any more stringent than those applied to foreign air carriers.*

6 **(b)** *If, by January 1, 1980, the ICAO reaches an agree-*
7 *ment on noise standards that complies with clause (1) or (2)*
8 *of subsection (a) of this section, within one hundred and*
9 *twenty days after such date, the Secretary, acting through*
10 *the Administrator of the Federal Aviation Administration,*
11 *shall immediately issue a rule to require all noncomplying*
12 *aircraft being operated by air carriers engaging in foreign air*
13 *transportation to comply with the noise standards set forth in*
14 *such agreement at a phased rate of compliance similar to that*
15 *in effect for aircraft registered in the United States. The re-*
16 *quirement applied to air carriers engaging in foreign air*
17 *transportation shall not be more stringent than those applied*
18 *to foreign air carriers.*

19 **SEC. 303. (a)** *The Secretary shall study and report to*
20 *Congress on (1) whether there is a need to have the Secretary*
21 *cease issuing original air worthiness certificates pursuant to*
22 *section 603(c) of the Federal Aviation Act of 1958 for civil*
23 *subsonic turbojet powered aircraft which have a maximum*
24 *certificated takeoff weight of seventy-five thousand pounds or*
25 *more if such aircraft do not meet, at a minimum, the noise*

1 standards for new type certificated aircraft set forth in regu-
2 lations issued by the Secretary, acting through the Adminis-
3 trator, on March 2, 1978, and (2) if there is such a need,
4 when the Secretary should cease issuing such certificates.
5 Such study shall include an analysis of the costs and bene-
6 fits of terminating the issuance of such certificates. Such
7 study shall also include a detailed comparison of the alterna-
8 tives to the Secretary's recommendation which shall in-
9 clude—

10 (A) a comparison of the compliance costs of the
11 Secretary's recommendation and all alternatives;

12 (B) a comparison of the level of noise abatement
13 anticipated as a result of the Secretary's recommenda-
14 tion and all alternatives;

15 (C) a comparison of the anticipated effects of the
16 Secretary's recommendation and all alternatives on the
17 air carrier and air frame industries of the United
18 States; and

19 (D) a comparison of the anticipated effects of the
20 Secretary's recommendation and all alternatives on
21 service to small communities.

22 The Secretary shall submit such report to Congress within
23 one year after the date of enactment of this title.

24 (b) Notwithstanding any other provision of law, during
25 the period beginning on the date of enactment of this title and

1 ending one hundred and eighty days after the date on which
2 the Secretary submits to Congress the report required under
3 subsection (a) of this section, neither the Secretary nor the
4 Administrator of the Federal Aviation Administration shall
5 issue any rule or regulation which requires aircraft, as a
6 condition to being issued original air worthiness certificates
7 pursuant to section 603(c) of the Federal Aviation Act of
8 1958, to comply with noise standards for such type of air-
9 craft which are more stringent than those in effect on May 1,
10 1979, for such type of aircraft.

11 (c)(1) Any final rule or regulation issued by the Secre-
12 tary or the Administrator of the Federal Aviation Adminis-
13 tration after the period specified in subsection (b) of this sec-
14 tion which requires aircraft, as a condition to being issued
15 original air worthiness certificates pursuant to section 603(c)
16 of the Federal Aviation Act of 1958, to comply with noise
17 standards for such type of aircraft which are more stringent
18 than those in effect on May 1, 1979, for such type of aircraft
19 shall be submitted to the Committee on Commerce, Science,
20 and Transportation of the Senate and the Committee on
21 Public Works and Transportation of the House of Repre-
22 sentatives. Any such rule or regulation shall become effective
23 sixty legislative days after the date of such submission,
24 unless during that sixty-day period either House adopts a
25 resolution stating that the House disapproves such rule or

1 regulation, except that such rule or regulation may become
2 effective on the date, during such sixty-day period, that a
3 resolution has been adopted by both Houses stating that the
4 Congress approves such rule or regulation.

5 (2) For purposes of this subsection, the term "legislative
6 day" means a calendar day on which both Houses of Con-
7 gress are in session.

8 SEC. 304. Notwithstanding any other provision of law,
9 or any rule or regulation issued pursuant thereto, the Secre-
10 tary shall authorize any air carrier to operate all noncomply-
11 ing two-engine aircraft of such air carrier beyond the date by
12 which such aircraft are to be in compliance with noise stand-
13 ards applicable to those aircraft in regulations issued by the
14 Secretary, acting through the Administrator of the Federal
15 Aviation Administration (14 CFR part 36), as such regula-
16 tions were in effect on January 1, 1977, by waiving the ap-
17 plication of such regulations to such aircraft if such aircraft
18 are used exclusively in air carrier service between points
19 within the State of Hawaii.

20 SEC. 305. (a) Notwithstanding any other provision of
21 law or any rule or regulation issued pursuant thereto, subject
22 to subsection (b) of this section, the Secretary shall authorize
23 any air carrier to operate any noncomplying two- or three-
24 engine aircraft of such air carrier beyond the date by which
25 such aircraft is to be in compliance with noise standards ap-

1 *plicable to such aircraft in regulations issued by the Secre-*
2 *tary, acting through the Administrator of the Federal Avi-*
3 *ation Administration (14 CFR part 36), as such regulations*
4 *were in effect on January 1, 1977 by waiving the application*
5 *of such regulations to such aircraft if (1) at least 60 per*
6 *centum of the operations of such aircraft by such air carrier*
7 *are at airports which enplaned less than 1 per centum of the*
8 *total enplaned passengers enplaned by all air carriers certifi-*
9 *cated by the Civil Aeronautics Board, and (2) at least 30 per*
10 *centum of the operations of such aircraft by such air carrier*
11 *are at airports which enplaned less than one-fourth of 1 per*
12 *centum of the total enplaned passengers enplaned by all air*
13 *carriers certificated by the Civil Aeronautics Board.*

14 (b) *Any airport operator of an airport described in*
15 *clause (1) or (2) of subsection (a) of this section may submit*
16 *a written notice to the Secretary that such airport does not*
17 *want operations at that airport by noncomplying two- or*
18 *three-engine aircraft to be considered by the Secretary as op-*
19 *erations occurring at an airport described in such clause (1)*
20 *or (2) for purposes of determining whether any such aircraft*
21 *meets the waiver conditions set forth in such subsection (a).*
22 *After the one-hundred-eightieth day after the date on which*
23 *the Secretary receives such notice, the Secretary shall not*
24 *consider such operations at such airport as operations occur-*

1 ring at an airport described in such clause (1) or (2) in
2 making such determination.

3 (c) For purposes of this section, the term "operation"
4 means a take-off or a landing in scheduled interstate or in-
5 trastate air transportation.

6 (d) Each air carrier operating noncomplying two- or
7 three-engine aircraft shall report to the Secretary on a regu-
8 lar basis as deemed appropriate by the Secretary in order to
9 determine the applicability of subsection (a) to such air
10 carrier.

11 (e) If an air carrier operating any noncomplying two-
12 or three-engine aircraft fails to meet the waiver conditions in
13 subsection (a) after the date or dates for compliance with
14 noise standards applicable to that type aircraft as prescribed
15 in regulations issued by the Secretary, acting through the
16 Administrator of the Federal Aviation Administration (14
17 CFR part 36), as such regulations were in effect on January
18 1, 1977, then such air carrier shall bring such two- or three-
19 engine aircraft into compliance within sixty days after such
20 failure is established by the Secretary.

21 (f) Except in the case of an emergency landing, any
22 noncomplying aircraft which is being operated pursuant to a
23 waiver granted to such aircraft under subsection (a) of this
24 section shall not land at an airport which enplaned more
25 than 1 per centum of the total enplaned passengers enplaned

1 *by all air carriers certificated by the Civil Aeronautics*
2 *Board unless the take-off immediately preceding such land-*
3 *ing of such aircraft occurred at an airport described in clause*
4 *(1) or (2) of such subsection (a).*

5 *SEC. 306. Section 609(a) of the Federal Aviation Act*
6 *of 1958 is amended by inserting after the second sentence*
7 *thereof the following new sentence: "For a period of ten years*
8 *beginning on January 1, 1981, no rule, regulation, or order*
9 *may be issued which amends, modifies, suspends, or revokes,*
10 *in whole or in part, a certificate issued pursuant to section*
11 *603(c) of this title, except for reasons of safety."*

12 *SEC. 307. Within six months after the date of enact-*
13 *ment of this Act, the Secretary, in cooperation with the*
14 *Chairman of the Civil Aeronautics Board, shall (1) review*
15 *the Airline Deregulation Act of 1978 (Public Law 95-504)*
16 *for purposes of studying the definition of essential air trans-*
17 *portation in the Federal Aviation Act of 1958 and consider-*
18 *ing the problem of reduction in air transportation for service*
19 *areas of more than one hundred thousand population and*
20 *communities of more than twenty thousand population, and*
21 *(2) recommend any appropriate solutions for such problem to*
22 *the Congress.*

23 *SEC. 308. Nothing in this title amending, superseding,*
24 *or otherwise requiring the modification of the aircraft noise*
25 *abatement compliance regulations heretofore issued by the*

1 *Secretary, acting through the Administrator of the Federal*
2 *Aviation Administration (14 CFR part 36), as such regula-*
3 *tions were in effect on January 1, 1977, shall impose any*
4 *legal liability on State and local airport proprietors with re-*
5 *spect to aircraft noise beyond such liability as may exist im-*
6 *mediately preceding the date of enactment of this Act.*

7 *TITLE IV*

8 *SEC. 401. Not later than ninety days after the date of*
9 *enactment of this Act, and each January 31 thereafter, until*
10 *implementation of collision avoidance systems in the national*
11 *air traffic control system, the Secretary of Transportation*
12 *shall submit to the Congress a report on the status of the*
13 *development of such systems. Such reports shall set forth pro-*
14 *posed timetables for the implementation of such systems. The*
15 *Secretary of Transportation's report shall include proposals*
16 *for any legislation needed to implement such systems.*

17 *TITLE V*

18 *SEC. 501. (a) Title III of the Federal Aviation Act of*
19 *1958 (49 U.S.C. 1341 et seq.) is amended by adding at the*
20 *end thereof the following new section:*

21 *"CONTROL OF NAVIGABLE AIR SPACE*

22 *"PROHIBITION*

23 *"SEC. 318. (a) Notwithstanding any other provision of*
24 *this Act, neither the Secretary of Transportation nor the Ad-*
25 *ministrator shall issue any rule, regulation, or order which—*

1 “(1) designates any area as a terminal control
2 area, unless at least 1 per centum of the total number
3 of passengers enplaned in the United States in the
4 most recent twelve-month period for which data is
5 available were enplaned at the primary airport within
6 such area;

7 “(2) raises the maximum altitude of any terminal
8 control area designated before December 27, 1978,
9 above the maximum altitude in existence for such ter-
10 minal control area on such date;

11 “(3) designates any area as a terminal radar
12 service area, unless such designation is in accordance
13 with criteria developed by the Administrator as in
14 effect on December 26, 1978;

15 “(4) requires aircraft conducting operations in the
16 navigable airspace between ten thousand and eighteen
17 thousand feet (mean sea level) in accordance with
18 visual flight rules to be under positive control; or

19 “(5) modifies the maximum aircraft speed limit
20 for operations below ten thousand feet (mean sea level)
21 as set forth in regulations issued by the Administrator
22 (14 CFR part 91.70(a)), as in effect on December 26,
23 1978.

24 “DEFINITIONS

25 “(b) For purposes of this section—

1 “(1) the term ‘positive control’ means the control
2 of all air traffic, within designated airspace, by air
3 traffic control;

4 “(2) the term ‘terminal control area’ means an
5 area of controlled airspace which (A) extends upward
6 from the surface or higher to specified altitudes, within
7 which all aircraft are subject to operating rules and
8 pilot and equipment requirements specified in part 91
9 of title 14 of the Code of Federal Regulations, (B) is
10 designated as a Group I, Group II, or Group III ter-
11 minal control area, and (C) includes at least one pri-
12 mary airport around which the terminal control area is
13 located; and

14 “(3) the term ‘terminal radar service area’ means
15 an area of airspace surrounding an airport which the
16 Administrator designates as an area within which air-
17 craft operating pursuant to visual flight rules may use
18 air traffic control to provide such aircraft with radar
19 vectoring, sequencing, and separation.”.

20 (b) That portion of the table of contents in the first sec-
21 tion of the Federal Aviation Act of 1958 under the center
22 heading

**"TITLE III—ORGANIZATION OF AGENCY AND POWERS AND DUTIES OF
ADMINISTRATOR"**

1 *is amended by inserting at the end thereof*

"Sec. 318. Control of navigable airspace.

(a) Prohibition.

(b) Definitions."

Mr. FLORIO. We understand that Congressman Rosenthal, who was to be our leadoff witness, has been delayed. Accordingly we are going to proceed with our next witness, Mr. Charles Elkins, Deputy Assistant Administrator of EPA.

Mr. Elkins, we welcome you to the committee. Will you introduce your associate for the record?

STATEMENT OF CHARLES L. ELKINS, DEPUTY ASSISTANT ADMINISTRATOR, ENVIRONMENTAL PROTECTION AGENCY, ACCOMPANIED BY JOHN SCHETTINO, DIRECTOR, TECHNOLOGY AND FEDERAL PROGRAMS DIVISION

Mr. ELKINS. Thank you, Mr. Chairman. I am sorry that Mr. Costle, the Administrator of EPA, is not able to be here this morning. I have with me Mr. John Schettino, who is Director of our Technology and Federal Programs Division and who therefore is the Director of aviation noise activities in the EPA.

We appreciate the opportunity to present our views here today on H.R. 3942. I want to say before I begin my testimony that the policies expressed in this testimony represent the views of the administration. It is important I believe to state this because, as you know, the Department of Transportation and the FAA will be testifying at your second day of hearings instead of today because of schedule difficulties on their part and it might seem that EPA's testimony represented only EPA's views.

As you know, Mr. Chairman, there have been differences between ourselves and the FAA on occasion on some matters but when serious consequences loom, such as you see now in these bills, we and the FAA are unanimous in our views on the basic policies involved.

Mr. FLORIO. I would like to acknowledge the greatly improved atmosphere between the FAA and EPA. When I came to Congress and dealt with this program a fairly short number of years ago, the relationships between the two agencies were at best strained. But over the last year or two I have seen greater cooperation which I think is commendable.

Mr. ELKINS. Thank you, sir.

Of course, I would not want to bind them to every word and nuance in this testimony. They will have a chance to speak at the hearing. I want to make clear that the cooperation between the

two agencies in support of these views is not forced but is voluntary on the part of the two agencies.

Mr. Chairman, in recent months we have witnessed the first steps toward what could become a significant weakening of the Federal Government's commitment to quieter neighborhoods and homes for the 6 million Americans exposed daily to excessive levels of aircraft noise. This potential change in the Federal Government's commitment is most apparent in the provisions of Senate bill 413, the counterpart bill to H.R. 3942 now before this committee. This Senate bill has provisions which would seriously cripple the FAA's noise reduction program by undercutting its key regulation: the 1976 retrofit/replacement regulation. We are sure that the Senate approved this bill, S. 413, with the best of intentions, but when the consequences are fully examined, it is clear that S. 413 would be disastrous for the Federal Government's noise abatement program.

We want to begin our testimony here today by discussing the shortcomings of this Senate bill. Like the Senate bill, the House bill's most serious fault is that it undercuts the very important FAA retrofit/replacement regulation. However, we also have many other problems with the House bill as well. H.R. 3942 also fails to reiterate the House of Representatives' strong commitment, as expressed in previous years, to provide significant abatement of aviation noise by the mid-1980's.

We hope that, when informed about the implications of these bills, this committee will want to send a clear and unmistakable signal regarding the essential soundness of the FAA regulation as promulgated and the need for strong Federal leadership in this area in the future.

Those of you who have studied Senate bill 413 will recognize its dramatic differences from last year's unsuccessful airline ticket tax bill. Last year's bill would have levied a \$3.3 billion tax on airline passengers and shippers to pay the cost of meeting the FAA's retrofit/replacement rule. That bill was attacked as inappropriate in light of the unusually high airline profits in 1978, and it failed to pass on the last day of the session. This year's Senate bill gives the industry a different kind of financial benefit, namely, relief from the rule itself for a large number of aircraft.

Unfortunately, letting the airline industry off the hook has to be done at someone's expense. In this case, it is the 6 million airport neighbors who have to suffer aircraft noise pollution and the local officials who will ultimately be paying noise damages resulting from the operations at their local airports.

When we think of pollution, we often think of old factories belching forth black smoke in the middle of town. It seems somewhat incongruous for a high technology industry like aviation to have any serious pollution problems. In fact, this industry has more than 400 major factories or facilities—one in every major American town and city. They spew forth tremendous amounts of pollution every day—in this case, noise—whose harmful impacts can be testified to by noise health effects experts and by the 6 million Americans who endure the brunt of it. We have provided the Committee with our publication entitled "Noise: A Health Problem," which presents the results on research on this subject.

Of course, this pollution problem cannot be cured overnight, and there is no single, simple solution. It requires a carefully thought out abatement program which brings together the resources of the Federal Government, the industry, and local communities to deal effectively with the problem. This program began in 1969 with the promulgation of the first FAA noise regulation. That 1969 regulation's preamble forecast, as part of a total program, the retrofit/replacement rule which was promulgated in 1976.

That regulation which would now be modified by the Senate bill, gave the airlines 8 years, until 1985, to bring their fleets into compliance with the noise levels first promulgated in 1969 for new aircraft. There is nothing hasty or radical about this regulation. It came after a multimillion dollar FAA/NASA research program proved its technical feasibility and economic reasonableness. As FAA Administrator Langhorne Bond recently testified:

Contrasting our findings in 1976 with the situation today—1979—when airline profits are at an all time high, it is apparent that the regulations are eminently more reasonable from an economic perspective at the present time than they were when issued.

To be quite frank, we at EPA have been openly critical of the FAA regarding the speed with which they have moved in the noise regulatory area. What they have required of this industry in terms of pollution cleanup has not been as stringent as we would like. Nevertheless, we have supported the FAA as they promulgated their regulations. Now, we fear that even these regulations will be overturned and the gains which were obtained in 1976 will be allowed to vanish without a full understanding of the very serious implications for the Nation.

It is title III of the Senate bill that is particularly objectionable in our view. The most damaging provisions are sections 303, 304, and 310.

Section 303 of the Senate bill would permit FAA to waive existing retrofit/replacement noise standards for domestic aircraft under a variety of situations, including the unavailability of retrofit or replacement equipment. While, on the surface, this section sounds reasonable, it should be noted that section 303 gives FAA statutory authority which it already possesses; namely, to provide waivers. More importantly, whereas the controlling guideline under present FAA rules is whether or not a waiver is in the public interest, under section 303 consideration of the public interest is conspicuously absent and is in fact replaced predominantly by requirements to consider industry concerns. This section, in combination with other components of title III, can only send a strong signal to the airlines industry that excuses for not moving aggressively to bring the aircraft fleet into compliance with the 1976 rule will be tolerated.

Of greater concern to EPA is section 304 of title III of the Senate bill. This section would require FAA to grant mandatory waivers beyond the 1983-85 compliance date for airlines that have signed binding contracts for replacement aircraft meeting stage III—1977—noise standards. Waivers for replacement of two- and three-engine, noncomplying aircraft would be granted to any airlines signing binding contracts by January 1983. Waivers for four-en-

gine, noncomplying aircraft would be granted to carriers signing firm orders by January 1985.

This part of the Senate bill would serve as an incentive to the airlines to continue operating their noncomplying two-, three-, and four-engine aircraft for an undetermined period beyond FAA's present compliance deadline. In short, it would be a powerful disincentive for timely compliance with the FAA rules. Although the bill's supporters have argued that the section would encourage decisions to purchase replacement aircraft, both we and the FAA are convinced that section 304 would not result in the purchase of any additional stage III aircraft. Instead, it would only encourage airlines to put off signing these contracts until the day before the FAA deadline, thereby giving themselves an automatic extension until delivery of the aircraft, which could be many years later.

We know of no aircraft which would be available for ordering in 1983 or 1985 which cannot be ordered today. In addition, those airlines committed to retrofitting or replacing their equipment, including Delta and Continental, would be penalized competitively for their good faith actions to comply.

Airport proprietors, who in recent years have been bombarded by noise lawsuits would also be penalized by enactment of this waiver provision. Since they have been taking the 1985 compliance deadline into account in planning complementary actions, any mandatory extension for the airlines would disrupt their efforts. Such an extension would also undermine the sense of joint responsibility between Federal and local officials which the FAA and we have tried to foster in addressing the aviation noise problem. Local airport proprietors may well give up hope in the Federal effort and take disruptive actions on their own to deal with their noise problems.

You might well be thinking, "Yes, but isn't it worth waiting a few years extra in order to get the quieter stage III aircraft?" The answer, we believe, is "No."

There is no need to grant an extension in order to encourage the purchase of stage III aircraft. There are several reasons for this:

In setting the 1985 deadline, the FAA built in several extra years for compliance in order to encourage airlines to buy such aircraft. The Senate bill extends the deadline without proof that more time is needed.

Aircraft which meet stage III noise levels are now available. These include the L-1011, DC-10, B-747, B-757, B-767, DC 9-80 and the A-300. We do not expect there to be any additional complying aircraft in 1983 or 1985. Thus, there is no need to put off the signing of these contracts and the delivery of these aircraft another 5 years.

There are strong incentives already for the airlines to purchase stage III aircraft since they are more fuel efficient than stage II aircraft. FAA Administrator Bond was emphatic in his testimony on this waiver when he said that he did not believe it would result in the purchase of any more stage III aircraft than under the FAA rule—it would just delay compliance with the rule.

Even if some airlines choose to retrofit their two and three-engine aircraft instead of purchasing stage III aircraft, the people living around airports will not lose as much as some would have us

believe. Two- or three-engine aircraft are made 7 to 8 decibels quieter by retrofitting. This takes them well within the required stage II limits and in fact brings them on the average within 3 to 4 decibels of the stage III limits. The 3 to 4 decibels is a significant difference, but not one which should be used as an excuse to give the airlines even more time to purchase stage III aircraft.

In short, to call section 304 a "new technology aircraft incentive" is misleading at best. It is a delay in compliance in order to allow airlines to buy, 4 to 6 years from now, aircraft which they could buy today. An extension beyond the 1985 deadline can be justified only if the replacement aircraft embody truly new technology noise abatement equipment—that is, if they meet stage IV or stage V noise limits. Stripped of all the rhetoric, this waiver provision is simply an open-ended amount of time for the industry to do exactly what the FAA gave them extra time to do in the first place back in 1976 when its rule was issued.

We wish our critical comments regarding the Senate bill could end here, because the foregoing testimony in our opinion constitutes quite a strong case against the bill and shows why we believe it is essential that the House do more than just remain silent on these matters. However, there is one other section of the bill we would like to comment on for the committee's benefit. This is section 310 of title III.

This amendment poses the greatest danger of any section of the Senate bill to the cause of aviation noise abatement. It would effectively exempt any aircraft that exceeds FAA's stage II noise standards by 5 decibels or less from ever having to comply with this rule. This amendment, which the Senate adopted on the floor without the benefit of hearings, is founded on the argument that the Federal Government should save the airline industry money by imposing aircraft noise reductions only when such restrictions are "humanly perceptible." This argument is based on the assumption that if a person cannot immediately perceive the difference between the sound levels of two aircraft when they fly over, the difference is insignificant. The Senate concluded that people cannot tell the difference if the aircraft differ by 5 decibels or less.

We believe this assumption as well as the 5 decibel determination to be wrong. It is almost universally accepted in the scientific community that the community reaction or response to aircraft noise is best measured not by single event flyover experiences, as suggested by the section 310 amendment, but rather by the long-term, cumulative reaction of people to the noise.

Thus, the question is not whether people each time distinguish different sound levels, but rather what their reaction is to repetitive flyovers of aircraft of differing levels. This approach advocated by the scientific community is really no different from the approach we take with other environmental pollutants in which we focus most of our interest on long-term chronic effects rather than making most of our decisions based on short-term acute reactions.

Because noise is measured in logarithmic units called decibels, small numeric changes in decibels can signify very large changes in the sound energy emitted. Thus, for instance, a 3-decibel increase in noise represents a doubling of the energy emitted. Studies of long-term community annoyance caused by noise show that a 1-

decibel increase can be expected to cause a 2-percent decrease in the number of people highly annoyed in a noise impacted community. Similarly, a 5-decibel difference will result in a 10-percent change. Therefore, while difference of 5 decibels or less in single flyover events may be indistinguishable by some individuals, small changes in noise exposure and the resulting changes in community response are measurable on an objective, statistical basis.

By relying on single event measures, the section 310 amendment would exempt at least half of the two- and three-engine aircraft in the U.S. fleet forever. The impact of this exemption would be felt both at those medium and small airports—75 percent of all commercial airports—which are served by two- and three-engine aircraft exclusively, as well as the large hub airports where two- and three-engine aircraft make up a large proportion of the service provided.

We also differ with the perceptibility threshold of 5 decibels arrived at by the Senate. Five decibels is unmistakably at the high end of the experimental data.

Studies have shown that people with unimpaired hearing can reliably judge differences or changes in sound level as low as 3 decibels in the field, and under laboratory conditions, studies have shown that some people can perceive differences as low as one-half decibel. Thus, the choice of 5 decibels as the dividing line between perceptibility and nonperceptibility clearly gives the maximum allowance to the airlines.

Finally, by adding a 5-decibel tolerance to the noise emission levels allowed under the current FAA rules, the Senate did not recognize that even aircraft that meet present FAA standards will still cause serious noise problems around airports. Any relaxation of these standards, whether by waiver or through the addition of a tolerance factor, would be unacceptable from the standpoint of neighborhoods situated around airports. We believe that even lower limits will need to be specified for future years for at least new aircraft if actual relief is to be provided in the face of an expanding domestic air fleet.

At heart, the section 310 amendment simply transfers the financial and legal responsibility for the noise created by the Nation's two- and three-engined fleet from the airlines and their passengers to airport communities and their heavily exposed neighborhoods. Thus, the real issue the amendment addresses is whether the benefits anticipated from reduced aircraft noise are worth the investment. In proposing its noise limits 5 years ago, issuing them 2 years ago, and scheduling them to take effect in stages through 1985, the FAA carefully took compliance costs into account. To hide the question of cost and benefits in a decibel argument by referring to what changes some individuals can hear in single event exposures misses the real issue in the debate, which is, that the FAA rules are reasonable and that every decibel reduction they require is meaningful.

Unfortunately, for airport operators counting on FAA rules to ease their liability burdens, for those public spirited airlines which have started retrofitting or replacing their equipment, and for the 6 million Americans impacted by severe aircraft noise, the section 310 amendment, if enacted, means that the Federal Government

will not followthrough on previous promises to address this public need.

Together, sections 303, 304 and the section 310 amendment have turned what started out as a noise abatement bill into a noise enhancement bill.

Mr. Chairman, this concludes our specific comments regarding Senate bill S. 413. We have spent a good deal of our time today discussing the serious implications of that bill if it were to be enacted and implemented. Unfortunately, we do not find the House bill acceptable either.

Mr. Chairman, please do not misunderstand me; we appreciate the sizable amount of effort already expended by the House of Representatives in developing H.R. 3942 which does not incorporate some of the worst provisions of the Senate bill and we commend the House Committee on Public Works. However, we must agree with the 14 members of that committee who voted against reporting that bill out of committee. The House bill has numerous problems which lead us to conclude that nothing will be gained by the passage of this bill and much damage will be done to the cause of aviation noise abatement.

I think Congressman Levitas summed it up very well in the last meeting of the committee when he said these bills should be renamed "The Noise Enhancement and the Christmas Tree Bill of 1979."

Specifically, we find the following sections of the House bill especially objectionable.

First. Sections 103 and 104 authorize airport operators to develop noise exposure maps and noise compatibility programs for their specific airports. We are concerned that some improvements be made to deal with three problems which we have identified in such an approach.

(a) Proprietors of very noisy airports may continue to refuse to admit the existence of their noise problem or to develop a noise compatibility program.

(b) Proprietors of relatively quiet airports could do much now to prevent problems from developing over the years as their airports expand, but, there is no incentive for them to plan and implement a program now, even though prevention is much cheaper than abatement.

(c) There is no requirement that airport proprietors make a conscientious effort to persuade local officials to take steps to insure compatible land use around airports, and little incentive for local officials to listen.

Second. Section 106 forbids any noise exposure map and the Secretary's list of land uses from being introduced into any law suit for damages around an airport. Although we can sympathize with the desire to discourage unnecessary lawsuits by citizens impacted by noise, it seems inappropriate to do so unless actual relief is being provided to these individuals. To phrase the point another way, we believe at a minimum that these maps and land use lists should be available for lawsuits if it can be shown that no program for abatement has been developed and approved or if such program is not being implemented by the airport proprietor.

Third. Section 107 prevents the award of damages to anyone who has constructive knowledge of the airport noise before he purchases the property in question, unless he can show that the damages stem from subsequent increases in the airport noise. Although this provision has some appeal, we believe it is based on several false assumptions.

(a) That the price which the persons pays for property around an airport accurately reflects the damage which is imposed by the airport noise;

(b) That publication of the existence of an exposure map in a newspaper is sufficient to bring the noise exposure to the attention of prospective buyers; and

(c) That the state of the art in the area of economic and health analysis related to airport noise is advanced enough to allow a plaintiff to quantify the damages incurred subsequent to his purchase of the property. This is an impossible burden of proof, we believe, in most cases.

We believe that this provision also incorporated an improper public policy by providing the proprietor this relief from liability without requiring any noise abatement on his part whatsoever.

Fourth. Section 105 requires the Secretary to prepare noise compatibility programs for National and Dulles Airports, but there are no criteria given with regard to what constitutes a good program, no requirement for public participation in the development of these programs, and no requirement to implement them.

Fifth. Section 303 enjoins the Secretary and the Administrator of FAA from issuing any rule related to aviation noise until 180 days after the Secretary prepares a report to the Congress on the subject of applying stage III noise limits to the manufacture of presently certificated aircraft. This is a broad prohibition which supersedes the mandate of the Noise Control Act under which the Secretary is to promulgate rules to protect the public health and welfare. This section includes a provision calling for a one-House veto of an FAA stage III rule applicable to the manufacture rather than the design of the aircraft. Such a provision is: (1) Contrary to the separation of powers; and (2) violates article I, section 7, of the U.S. Constitution which requires that resolutions having the force of law be sent to the President for his signature or veto. This prohibition on regulations also covers all FAA noise rules, not just the one covered by the study.

Sixth. Section 306 gives a blanket 10-year exemption to all aircraft from having their certificate changed for noise purposes. This means that no matter how cheap and practical the change may be, nor how necessary, no change can be made for any aircraft between the years 1981 and 1991. The apparent concern here is that airlines not be required to retrofit aircraft for at least 10 years after they purchase them.

This provision stops most if not all rulemaking on noise during the next 11½ years until 1991. This section should be stricken or otherwise changed to preserve the FAA's ability to issue rules changing certificates under appropriate conditions.

Seventh. Section 305 allows the operation of noncomplying two- and three-engine aircraft into all airports, provided each individual airplane has 60 percent of its operations in medium and small hub

airports and as long as each landing at a major hub airport is preceded by a takeoff at a small or medium airport. We recognize the intent to improve air carrier service to small communities that are affected by deregulation, but the Administration believes that this is not an appropriate solution for that problem. The problems we have cited with regard to section 310 of the Senate bill are generally applicable to this section as well.

Eighth. The Department of Transportation has objections to other provisions of the bill and we defer to their testimony on those items.

In summary, Mr. Chairman, all of these problems make the House bill unacceptable to the EPA and to the Administration. I would be happy to answer any questions which you may have.

Mr. FLORIO. Thank you very much, Mr. Elkins, for a very comprehensive statement. It should be noted for the record that the FAA officials will be with us at the hearing next week. It should also be noted for the record that the subcommittee has extended an invitation to a number of aircraft manufacturers for them to testify.

So far this manufacturers have refused the committee's invitation. We are going to continue in our efforts to induce the aircraft manufacturers to come before the committee to give us their thoughts on the impact of the proposed legislation.

Acknowledging the fact that the House Public Works bill may be preferable to the Senate bill from the noise abatement standpoint, I would like your thoughts as to whether or not, if the Public Works bill is passed in its present form, those who are interested in airport noise and aircraft noise abatement will be better off having no bill than the Public Works bill. Does EPA have a position with regard to the ability to recommend the Administration support for the legislation that is currently before this committee?

Mr. ELKINS. There is no doubt in our minds and I think no doubt in the minds of any agency in the Administration that no bill is more desirable than the House bill.

Mr. FLORIO. Title I of the bill before us shifts to DOT-FAA, as I read it, the exclusive responsibility for putting together a single system of noise measurement and evaluation. This, in my opinion, is a substantial modification of existing law which provides a very important role for EPA. Is this your interpretation? What is your thought with regard to the desirability of that change?

Mr. ELKINS. Mr. Chairman, we have been addressing this question within the Administration. As you may know, this same provision is part of the Administration's extension of the ADAP legislation, the Airport and Airway Development Act, which was submitted to the Congress a couple of weeks ago. We have asked for reconsideration of this particular provision by the Administration and have been assured that such a reconsideration will take place. Consequently at this point I am unable to really comment any further on the desirability of that. We do have problems with it. We do feel that it really changes the Noise Control Act, but I think until the Administration completes its review that I would be best advised not to comment further.

Mr. FLORIO. I appreciate your position but at the same time there isn't any question in your mind, is there, that EPA plays a consult-

ing role in the formulation of noise standards sealing with airports under the Noise Control Act? Is that a fair statement?

Mr. ELKINS. That is true, Mr. Chairman. We also feel that we have already done this task.

Mr. FLORIO. I understand that. There is no question that title I of this will provide exclusive control over the formulation of regulations to the DOT or FAA.

Mr. ELKINS. That is correct.

Mr. FLORIO. Therefore effectively eliminating EPA's role in that whole process?

Mr. ELKINS. That is correct.

Mr. FLORIO. So there is a fairly substantial conceptual change as to how these proposed regulations, the regulatory system, will proceed from this point if this bill is enacted into law.

Mr. ELKINS. With regard to measurement and appropriate land use, yes.

Mr. FLORIO. One of the most difficult provisions of the proposed bill for me to understand, because I am not sure exactly what its objective rationale is, is the section that provides for waivers of two- or three-engine aircraft which fly a certain percentage of their operations into small or medium airports. I would like you to, if you could, provide me with what you think is the rationale. We are talking about 60 percent of operations into small and medium airports. Does that in any way preclude the same aircraft which will be provided waivers from operating in major population center airports for the balance of their operational period?

Mr. ELKINS. Mr. Chairman, I sat through the hearings and discussions in the other committee and it is my impression from listening to its discussion of the section that the concern of the committee is that small communities not be deprived of essential air service because of deregulation. They felt that one possible incentive to continuing that service would be to exempt aircraft that flew into these smaller communities so that that service would continue. Both the FAA and we testified that we felt it was highly unlikely that this would be a sufficient incentive, since we are talking about only \$250,000 per plane for retrofit, to keep service in the smaller community.

The effect of the section would leave 40 percent of the operations in airports that are not small and medium size; that is, the larger hubs. This will have a dramatic impact on airports like Atlanta, JFK, La Guardia, Los Angeles, et cetera. In addition to that, what many of us would think of as large airports are called medium airports under the official designation here. So we are talking about airports like San Diego, Norfolk, Buffalo, and Raleigh-Durham. These airports which are quite large would be part of this 60 percent. So we see this as quite a loophole in the FAA regulations.

The only saving grace of it is, I suppose, that it is so complicated that the airlines may decide it will cost them too much to live within the provision and to comply with it. However, if they use computers perhaps they can overcome it.

Mr. FLORIO. Is it conceivable that a marketing decision might be made on the basis of where you can get your exempted aircraft into markets? In other words, the rationale of the Public Works Committee is that exemptions will induce air carriers to serve

certain small- and medium-sized municipalities and airports. If this is true, is it also possible for air carriers to utilize these exempted, noisy aircraft in the larger hubs already severely impacted by aircraft noise?

Mr. ELKINS. That may well be true. Many of these medium hub airports have noise today. This will aggravate that problem if in fact that takes place.

Mr. FLORIO. The basic question that EPA and some of the health agencies are interested in is that of analyzing the cumulative nature of continuous exposure to noise rather than decibel level of a single flyover. My understanding is that EPA is continuing in its study of the health impact of noise. Can you give us a brief update on what it is that EPA is doing?

Mr. ELKINS. Yes, Mr. Chairman. I think many people think of noise as simply an annoyance or esthetic problem and therefore not worthy of much consideration. This is not true. I think one way of perhaps understanding it is to think of noise as a stressor, something that stresses our bodies.

There are two fears we are born with. One is the fear of falling and the other one is the fear of a loud noise. We never really get over these fears. If, for instance, a child would come up behind you now and shoot off a cap gun you may have been able over the years to socially adapt your outward behavior in such a way that you would not jump out of your chair. If you were to then have your blood pressure taken and look at your heart rate you would find that your blood pressure increases, your heart rate is greater, adrenalin is being secreted at a higher rate, that the body responds whether or not you can keep your outward composure.

This is shown in studies that we and others have done. For instance, children, who grow up in noisy homes and go to noisy schools have higher blood pressure. We and NIH are conducting a study with primates, with monkeys, to show what the effects of noise are on their cardiovascular system. They have a cardiovascular system very similar to humans. We are showing there that there is a 30-percent increase in blood pressure during the 9 months of exposure and, perhaps even more important, we are seeing that when the noise is turned off at the end of this 9-month period—it has been a month and a half since noise was turned off—that this blood pressure has not dropped.

It is too early to draw definitive conclusions but apparently the high blood pressure we are seeing here in the monkeys is not just something that is transitory. It is something that is a more long-term chronic effect. We will have to wait and see how long this will continue.

I guess one other point I could make, Mr. Chairman, in terms of health effects, particularly in terms of aviation noise, is the impact on sleep. We all know what it is like to miss one night's sleep and we all feel we can recover from that. If you live under the flight track of an airport it is not just one night, it is every night. With continual deprivation of sleep, whether you are awakened or not—the studies show even if you are not awakened, your sleep will be disrupted—you will not get as much rest as you otherwise would. This kind of effect is clearly a threat to a person's health.

Mr. FLORIO. Knowing of the intense feeling in the municipalities which are impacted by noise from airports, what do you anticipate might be the local responses to the watering down of the proposed regulations should this legislation go through in its present form? Can you anticipate what the municipalities may do and what the action will be?

Mr. ELKINS. I think there will be a delayed reaction. This legislation is complicated. It will take a few weeks, a few months, before they realize what really happened to them. But I think the result could well be increased despair on their part with respect to what the Federal Government will do to solve this problem. They will then, I think, feel that something will have to be done at the local level which means more drastic proprietor action, that is, people who operate the airports will have to take more drastic action to try to compensate for this lack of Federal action. Additionally, I think we can anticipate an increase in law suits by people who give up on the Government and will say they will have to go into court to get their justice based on their constitutional right not to have their property rights taken from them without just compensation.

Mr. FLORIO. In your testimony you made reference to the equity of changing the rules now, so to speak, when some of the airlines have made a good faith effort to comply with existing deadlines. In the current atmosphere of new regulation and the high degree of competition between airlines, I would like to identify whether or not your observation is that you will be placing those who comply with the law at a competitive disadvantage with those who have not been in compliance and are in the forefront of trying to water down the law.

I think it is highly inequitable, undesirable from a social standpoint, that those who have complied be penalized and that those who have not complied be granted the exemptions. Has anyone done an economic analysis as to what the situation would be, which airlines would be adversely impacted upon by waiving these regulations?

Mr. ELKINS. I am afraid we have not. Perhaps the FAA has. Delta, Continental, and United particularly have taken steps to comply. I think clearly this sends a signal to the airlines and to other industries that money could be best spent, instead of complying, on a public relations campaign about why they should not comply and visits to their elected representatives.

Mr. FLORIO. The last question is that given the voluntary noise compatibility planning and preparation of noise exposure maps, do you feel that voluntary planning is going to be very effective and would you make a recommendation that it would be more effective to have mandatory planning?

Mr. ELKINS. Mr. Chairman, you have seen the situation in Philadelphia, which is not unique, where the international airport at Philadelphia has chosen not to submit an airport plan or to admit that there is a noise problem, maybe not so much in Philadelphia as perhaps in another State. They could proceed on that basis without fear of intervention except for the amendments that you sponsored last year. For other airports around the country it is perfectly possible under this bill, as well as under the present FAA rule, for them to continue to ignore the problem.

Mayor Daily of Chicago used to say there is no airport noise problem in Chicago. I think he was literally correct. There is no noise problem in the city of Chicago; there is a noise problem in communities all around Chicago from the Chicago O'Hare Airport. Until there is a requirement for the large airports to face the noise problem straight on and to make a good faith effort to look at the techniques that can be applied, I think we will continue to see some of the worst cases of noise impact continue.

Mr. FLORIO. I suppose an offshoot to that question is: Do you feel that airport development funds should be made contingent upon the willingness of the airport to plan for abatement?

Mr. ELKINS. I think that surely is one approach, Mr. Chairman. We have here airport development funds being spent to expand airports, to make them more productive, at the same time that we have those same airports impacting citizens who are complaining, "You are taking my property rights and nothing is being done." It would be our feeling that the highest and most important use of the Airport Trust Fund is to take care of the pollution problems from existing operations and not to make the problems worse by expanding airports.

Mr. FLORIO. Gentlemen, we thank you very much for your helpful testimony. We look forward to working with you.

Thank you very much.

At this time, I will have to recess the committee because we have a vote. When we reconvene Congressman Rosenthal will be our next witness.

[Brief recess.]

Mr. FLORIO. We are honored to have Congressman Rosenthal here who has been a very forceful proponent of appropriate airport noise control mechanisms over the years, and who has been one of the leading lights in the Congress in focusing public attention on this problem. We are very pleased and honored to have you before our committee.

STATEMENT OF HON. BENJAMIN S. ROSENTHAL, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF NEW YORK

Mr. ROSENTHAL. Thank you very much, Mr. Chairman. I appreciate the kind words. Aircraft noise and safety are two subjects of enormous concern to my constituents, tens of thousands of whom live near or beneath the flight paths of LaGuardia Airport. These people are frustrated, angry, and bitter. Many, in fact most, have lived in these neighborhoods since before the jets intruded into their lives. They have heard the promises and explanations of the FAA, but these have been drowned out by increasing jet noise. My constituents—like yours, Mr. Chairman, and like millions of other Americans adversely affected by aircraft noise pollution—find the present noise conditions unacceptable.

Two or three months ago I held a town hall meeting in Flushing right under the glide path of the flight pattern to LaGuardia. The meeting was disrupted so much by noise we almost couldn't continue. It was actually embarrassing. The people were bitter, frustrated, unhappy. They were discontented with the work certainly of the Government and agencies and they even questioned whether

I was able to deal with the problem that they found was so intrusive into their personal life and peace and tranquility that they were totally turned off by all facets of government.

My own view is that if we don't do something about it quickly and in a positive way we are going to alienate millions of American citizens from the political process.

The bill before this committee is entitled the "Aviation Safety and Noise Reduction Act," and thus presumably contains measures designed to reduce aircraft noise pollution. One of our colleagues has suggested a more accurate name might be the Aviation Noise Enhancement and Safety Reduction Act. I agree. As one who has been active in legislative efforts to control aircraft noise for over 15 years, I must report that this bill will do virtually nothing to reduce aircraft noise levels and will in fact probably result in noisier planes and airports. If enacted, H.R. 3942 will doom thousands of my constituents and millions of other Americans to continued suffering from aircraft noise pollution for years to come.

First, the bill would take all authority for the establishment of "normally compatible" aircraft noise levels away from the Environmental Protection Administration and would give it to the Department of Transportation and its Federal Aviation Administration. Standards for noise measurement were set in 1971 by HUD and accepted by all government agencies except DOT/FAA. To now suggest giving DOT/FAA that kind of authority would be a disaster. It is like asking Idi Amin and the Ayatollah Khomeini to write and enforce a code of human rights.

The legislation would gut existing regulations designed to reduce excessive aircraft noise. The bill would prevent the FAA from imposing any new noise control requirements on aircraft which meet the noise requirements in effect at the date of their purchase.

The bill would limit the FAA's powers to impose a cutoff date on the manufacture of certain excessively noisy aircraft.

The bill does nothing to provide the public with immediate relief from oppressive aircraft noise.

I have introduced another piece of legislation, H.R. 170, which is a modest effort to do something in this area. The Airport Noise Curfew Act would provide an effective method of implementing some of these ideas. It calls for the creation of a nine-member commission to investigate the establishment of nationwide curfews on airports and aircraft operations during normal sleeping hours. We are willing to accept some modest effort to provide tranquility from aircraft noise.

This I would say is not a long-term solution to the problem of aircraft noise but at least it would have an immediate beneficial impact at a low cost and would demonstrate Congress commitment to reducing noise levels at our Nation's airports. The establishment of the nighttime curfews would, I think, even though it involves a good deal of emotional dialog, would be a good first step.

Mr. Chairman, H.R. 3942 is a disaster. It would result in noisier planes when we should be striving for quieter airports. It would prevent the imposition of safety standards at a time when more stringent safety requirements are urgently needed. Although the current laws are woefully inadequate, I am forced to conclude that

no bill at all would be far superior to this atrocity. H.R. 3942 is clearly designed by the airlines, for the airlines.

I urge the members of this subcommittee to defeat this special interest bill. I can only promise you that the members of our delegation from New York and many others of like minds would have to fight this bill on the floor and if by any chance it should pass the Congress, would urge the President in the interest of national sanity to veto it.

It is my view, Mr. Chairman, that the time has finally arrived that the Congress must pass effective noise control legislation and it is obvious, as I have asserted already, that this bill is not that vehicle.

[Hon. Benjamin S. Rosenthal's prepared statement follows:]

STATEMENT OF HON. BENJAMIN S. ROSENTHAL, A REPRESENTATIVE IN CONGRESS
FROM THE STATE OF NEW YORK

Mr. Chairman, Members of the Subcommittee, I appreciate this opportunity to appear before you today to testify on H.R. 3942, the Aviation Safety and Noise Reduction Act.

Aircraft noise and safety are two subjects of enormous concern to my constituents, tens of thousands of whom live near or beneath the flight paths of LaGuardia Airport. Throughout the day and night, the planes roar overhead. These people are frustrated, angry and bitter. Many have lived in these neighborhoods since before the jets intruded into their lives. They have heard the promises and explanations of the FAA, but these have been drowned out by increasing jet noise. My constituents--like yours, Mr. Chairman, and like millions of others Americans adversely affected by aircraft noise pollution--find the present noise conditions unacceptable.

Aircraft noise pollution is a serious threat to the physical and psychological well-being of over 6 million Americans. In addition to damaging hearing, aircraft noise has been linked to cardiovascular disease, diabetes, arthritis, fetal damage, increased heart rate, and high blood pressure. It interferes with sleeping, listening to radio and television, communicating, reading, and many of our other daily functions. It depreciates the market value of residential property and disrupts schools and businesses. The increased demand for air service resulting from airline deregulation is likely to exacerbate the noise problem and make living conditions even more intolerable for millions unless immediate action is taken.

The bill before this committee is entitled the "Aviation Safety and Noise Reduction Act," and thus presumably contains measures designed to reduce aircraft noise pollution. One of our colleagues has suggested a more accurate name might be the Aviation Noise Enhancement and Safety Reduction Act. I agree. As one who has been active in legislative efforts to control aircraft noise for over 15 years, I must report that this bill will do virtually nothing to reduce aircraft noise levels and will in fact probably result in noisier planes and airports. If enacted, H.R. 3942 will doom thousands of my constituents and millions of other Americans to continued suffering from aircraft noise pollution for years to come.

First, the bill would take all authority for the establishment of "normally compatible" aircraft noise levels away from the Environmental Protection Administration and would give it to the Department of Transportation and its Federal Aviation Administration. Standards for noise measurement were set in 1971 by HUD and accepted by all government agencies except DOT/FAA. To now suggest giving DOT/FAA that kind of authority would be a disaster. It is like asking Idi Amin and the Ayatollah Khomeini to write and enforce a code of human rights. The FAA has repeatedly proven itself insensitive to the needs and concerns of communities and citizens affected by aircraft noise

pollution. It has consistently advocated the interests of the airlines over the interests of those who live near our major airports, and should never be made the sole watchdog over noise level violators.

Second, the proposed legislation would gut existing regulations designed to reduce excessive aircraft noise. FAA regulations issued in 1976 gave aircraft owners overly generous deadlines for bringing their planes into compliance with noise standards. H.R. 3942 would scrap these deadlines for two and three-engine aircraft, which are the worst offenders. Over 1,100 planes will thus be freed from existing regulations which require that they be modified to create less noise by 1983 at the latest. While these planes are to be restricted primarily to small and medium-sized airports, even the bill's sponsors admit that exceptions could be made and that these noise hazards will be allowed to fly in and out of major airports as well. The effect of lifting the current noise standards will be that close to 60,000 flights into and out of LaGuardia Airport each year could be made by airplanes that do not meet FAA noise standards. Over 1.5 million flight operations could be made each year at airports nationwide by non-complying aircraft.

Third, the bill before this Subcommittee would prevent the FAA from imposing any new noise control requirements on aircraft which meet the noise requirements in effect at their date of purchase. A plane purchased in 1981 that met existing noise standards would not have to be modified until after 1991, no matter how cheap the modification nor how improved the state of noise reduction technology. By then many of the neighbors of major airports will be deaf and past caring about aircraft noise.

Fourth, H.R. 3942 would limit the FAA's powers to impose a cutoff date on the manufacture of certain excessively noisy aircraft. The agency moves slowly as it is, but the current proposal would require the FAA to submit proposed restrictions on manufacturing to Congress for study. Either house would be able to veto any manufacturing cutoff date, thus raising the possibility that factories will continue to turn out noisy 727's and DC-9's for years beyond the cutoff dates currently being considered.

Fifth, the bill does nothing to provide the public with immediate relief from oppressive aircraft noise. Current plans for engine retro-fitting, aircraft replacement, noise contour maps and compatibility studies are long-term solutions to noise pollution. While we await the implementation of these proposals, I recommend that aircraft operations during normal sleeping hours be limited in order to provide immediate relief to the 6 million Americans adversely affected by aircraft noise. My legislation, H.R. 170, the Airport Noise Curfew ACT, would provide an effective method of implementing this idea. It calls for the creation of a nine-member commission to investigate the establishment of nationwide curfews on airport and aircraft

operations during normal sleeping hours. Nighttime curfews are already in effect at National Airport here in Washington as well as others in the U.S. and abroad. FAA statistics indicate that a curfew between 11 P.M. and 7 A.M. would create only minimal inconvenience for airline passengers. This is not a long-term solution to the problem of aircraft noise by any means, but it would have immediate beneficial impact at low cost and would demonstrate Congress's commitment to reducing noise levels at our nation's airports. The establishment of nighttime curfews would be a good first step in the transition to quieter airport communities.

Mr. Chairman, while my primary concern here is with aircraft noise pollution, I must also point out that H.R. 3942 will severely limit the FAA's ability to implement desperately needed air traffic safety requirements. After 144 people were killed in a mid-air collision over San Diego last year, the FAA proposed a number of regulations designed to decrease the possibility of mid-air collisions and to increase air traffic control over most aircraft. H.R. 3942 would prohibit the FAA from implementing any of these regulations--in the wake of the worst air disaster in U.S. history. 250 million airline passengers a year are being placed in jeopardy for the sake of a few commuter airline operators and private pilots who don't want to be "hampered" by air traffic controllers.

In short, Mr. Chairman H.R. 3942 is a disaster. It would result in noisier planes when we should be striving for quieter airports. It would prevent the imposition of safety standards at a time when more stringent safety requirements are urgently needed. Although the current laws are woefully inadequate, I am forced to conclude that no bill at all would be far superior to this atrocity. H.R. 3942 is clearly designed by the airlines, for the airlines. I urge the members of this subcommittee to defeat this special interest bill. Should it be reported out of committee, I will fight it on the floor, and should it be passed by the House in its present form I will immediately wire the President and urge him to veto it. Congress can and must pass effective noise control legislation, but this bill is not that vehicle.

Mr. FLORIO. We thank you very much for your continuing support of efforts to control and abate noise. If I read the feeling of the subcommittee—I have talked to the members—it is the inclination of the subcommittee to draft a clean bill, perhaps as an alternative to the bill that was before the Rules Committee, and then go to the Rules Committee to ask for an opportunity to provide the House with an option of voting for one of two approaches.

Hopefully the approach that this committee would take would be more to the liking of your constituents and what I perceive to be the public feeling of the need to deal with this.

We thank you very much. We look forward to receiving this report.

Mr. ROSENTHAL. I do want to commend you for that effort. You have recognized how important it is. I thank you for the opportunity to appear here this morning.

Mr. FLORIO. Thank you.

Our next witness is Mr. Rockenstein, Alderman from Minneapolis, Minn., who is here as spokesman for the National League of Cities.

Mr. Rockenstein, we thank you very much for your appearance. You may introduce your colleague for the record. We have copies of your statement which we have gone over. Without objection we will enter your statement into the record in its entirety, and would ask that you speak in summary fashion.

STATEMENT OF WALTER H. ROCKENSTEIN II, ON BEHALF OF THE NATIONAL LEAGUE OF CITIES, ACCOMPANIED BY KEVIN McCARTY, OFFICE OF FEDERAL RELATIONS

Mr. ROCKENSTEIN. Thank you, Mr. Chairman.

My name is Walter Rockenstein. I am a city councilman elected by the residents of the 11th Ward in Minneapolis, Minn. I am here today representing the National League of Cities of whose Environmental Quality Committee I am the immediate past chairman. With me today is Mr. Kevin McCarty of NLC's Office of Federal Relations.

I will read only certain portions of the statement. I will try to indicate those pages, Mr. Chairman, so that people can follow me as I go along.

Mr. FLORIO. Thank you.

Mr. ROCKENSTEIN. By way of background, the ward I represent in South Minneapolis is under the main runways of Minneapolis-St. Paul International Airport, a major hub airport. Because of the severe noise impact on the 30,000 people who live in the 11th ward, I have devoted considerable time over the last 5 years to the reduction of aircraft noise and to airport land use planning.

Progress on aircraft noise reduction has been painfully slow. Nevertheless, Federal regulatory framework is now in place and momentum has been established toward aircraft noise reduction.

The legislation before you for consideration, H.R. 3942, threatens all our past efforts. Bluntly, H.R. 3942 is a total sellout to the airline industry. It is an abandonment of the public interest. The bill's pretense is aircraft noise reduction, but its substance is a rollback of Federal noise deadlines and a roadblock to future aircraft noise regulation.

It should be clear to the members of this committee what is happening. Most of the airline industry opposed FAR part 91, the fleet noise rule when it was adopted by the FAA in late 1976. Most airline companies have deliberately chosen not to comply despite the ample lead time provided for retrofit or replacement of non-complying—Stage 1—aircraft. Now, at the 11th hour, the industry is trying to muscle through congressional delays in the compliance deadlines. H.R. 3942 repeats this pattern by passing the buck to cities and airport operators. We are blamed for inadequate land planning, noise reduction deadlines are pushed back, and we are told to solve the problem.

In the case of Minneapolis and a majority of our Nation's cities, I can assure you of two things. First, our land planning is not to blame for the aircraft noise problem. In most large cities land uses were decided decades ago, in some cases prior to the notion of air travel. In these cities the airport was the "last house on the block."

In other cities, like Minneapolis in particular, buffer land was provided around the airport during the days of propeller driven aircraft. The higher noise levels of commercial jet aircraft shattered these early efforts at responsible land planning. Indeed, many communities watched airports develop right up to the boundaries of residential areas to accommodate increases in air traffic and the longer runways required by larger and heavier jet aircraft.

Second, few cities can afford a land use solution to aircraft noise. Large scale reasoning and redevelopment in high noise impact zones around airports is not practical without billions of dollars for acquisition, relocation, demolition, and redevelopment.

Does Congress expect that the 6 million people living in high aircraft noise impact zones will move? If I am not mistaken, that is exactly what the supporters of H.R. 3942 are advocating, short of saying it. Is that a socially responsible and fiscally prudent Federal policy?

No. Noise reduction at the source must remain the focus of Federal policy. In adopting the fleet noise rule that requires all aircraft to meet FAR part 36 standards, the FAA had to demonstrate that the regulation was technologically feasible and economically reasonable; and a few airline companies, acting in the public interest, are confirming the FAA's judgment by putting the technology in place.

The solution to aircraft noise is still principally at the source—the airplane. The National League of Cities strongly opposes any delay in implementing FAR part 91 or other measures to reduce aircraft noise at the source. H.R. 3942 in its present form should be rejected.

The roadblock and rollback provisions of title III make this entire legislation a sellout to the irresponsible members of the airline industry. Let me review the key sections and the league's objections.

Title III, section 303. This provision limits the FAA's powers to require manufacturers to comply with stiffer noise standards for new production aircraft certificated prior to March 2, 1978, or for derived growth versions of previously certificated aircraft. The FAA is already moving too slowly with rulemaking in this area.

For example, Northwest Airlines recently placed an order for new Boeing 747's with a contract provision that they comply with stage III noise regulations. Boeing agreed and has delivered the first aircraft under this contract, and that aircraft is flying today.

Additional congressional roadblocks and checkoffs will only prolong the rulemaking process. As Congressman Glenn Anderson said in his minority views on H.R. 3942: "There is no justification for the further delays which the amendment will require."

Title III, section 305. The National League of Cities opposes any rollback of compliance deadlines for two- and three-engine aircraft. This patchwork scheme to pawn off noncomplying aircraft to smaller commercial airports in the interest of insuring air service to small cities supposedly hit hard by deregulation is ludicrous.

First, if in fact this could be done, is it socially responsible to tell our small cities that you can have air service but you will have to put up with noise? Is this a fair U.S. policy?

Second, the league does not believe that this bill will in any way support increased air service to less profitable routes as it purports to do. The major hub airports such as Los Angeles, Chicago, Atlanta, and New York are responsible for the bulk of enplaned passengers. As such it is certainly more profitable to operate the new generation of wide body jets out of these facilities for reasons of economy.

Smaller jets will naturally service smaller airports. Thus, the apparent socially responsible ploy to guarantee air service to smaller communities is in effect a confirmation of the status quo and will not offer either relief from aircraft noise, or better airline service.

Third, people living around airports desperately need the relief from current aircraft noise or protection against potential aircraft noise increases offered by compliance with FAR part 91 deadlines. Minneapolis offers a clear example.

Mr. Chairman, I have provided you and members of the committee copies of the two charts I will now use to illustrate my point. The first relates to landing noise and shows two narrow elongated 65 Ldn noise contours with one inside the other. The larger solid line contour represents the actual landing noise impact area over my ward in 1977, the year just after FAR part 91 was promulgated. The dotted line represents the projected 1990 65 Ldn noise contour under three assumptions: (1) All aircraft in compliance with FAR 36; (2) all aircraft use a split segment glide slope approach to maximize the benefits of the SAM retrofit kits; (3) an increase of 62,000 operations—23 percent—which is the projected increase in operations for this airport by 1990. As you can see, FAR compliance and the use of operational procedures to maximize its benefits enables us to absorb our projected increase in operations and substantially reduce the number of people impacted. Without FAR 36 aircraft the increased traffic would expand the current noise impact area.

Unfortunately, my second chart on takeoff noise shows a gloomier picture. Again the solid line represents the actual 1977 65 Ldn takeoff noise impact area. And the dotted line represents the projected 1990, 65 Ldn noise contour under three assumptions: (1) All aircraft are in compliance with FAR 36; (2) all aircraft use the

Northwest Orient Airlines quiet EPR takeoff procedure to maximize the benefits of the SAM retrofit kits; (3) an increase of 62,000 operations—23 percent.

On takeoff FAR 36 compliance and operational procedures to maximize its benefits only holds the noise impact area relatively constant. Without FAR 36 aircraft the increased traffic would substantially increase the people suffering noise impact.

Fourth and finally, the airlines can comply with FAR part 91 deadlines. Responsible airlines are doing it today. Again, let me use Northwest Orient Airlines as an example.

Northwest began its compliance program quietly in 1977 by retrofitting new engine nacelles on 12 early model Boeing 747's with noisy blow-in doors. FAR 36 standards were met and a fuel saving realized.

In late 1978 Northwest ordered SAM retrofit kits for its 23 727-200's which do not meet FAR 36. This order covered 89 engines, 69 on the aircraft plus 20 spares. These kits are being installed now as each engine receives its regularly scheduled heavy overhaul.

This leaves Northwest with 19 727-100's which do not comply with FAR 36. If other airlines are exempted from compliance, then Northwest may choose to not retrofit these aircraft because of competitive considerations.

Here is a responsible company moving to meet the law. Will Congress now reward this company by giving those who deliberately ignored AR part 91 the competitive advantage of a compliance deadline rollback?

The league hopes not.

H.R. 3942 is a bad bill, a bill written by members of industry who really do not care about the impact of aircraft noise on Americans or the costs to our society. Its "Aviation Noise Reduction" title is a sham and a fraud.

Mr. Chairman, the Senate had a bill of similar irresponsible intent before it, and it passed with only 15 dissenting votes. Only 15 Senators chose to reaffirm our country's commitment to environmental cleanup. Only 15 Senators did not succumb to airline industry pressure. Only 15 Senators voted in the public interest.

Now the House Committee on Public Works and Transportation has reported out this airline sellout bill. The National League of Cities looks to this subcommittee for leadership in killing this legislation.

If this bill passes the House of Representatives and is finally reported to the President, NLC will do everything in its power to secure a veto. If it is signed by the President and becomes law, I can assure this committee that the number of local curfews will skyrocket together with any number of locally initiated tactics to prohibit the operation of noncomplying jet aircraft.

I have a letter that I received from one of the residents of ward 11 which I would like to read. "I am a south Minneapolis resident driven crazy by the unbelievable aircraft noise. It has gotten to the point of utter ridiculousness. Can't something please be done about this? I am home with my year-old baby and the noise level drives her to miss naps, et cetera. It really is far too much to ask us to put up with this increased traffic. Others in my neighborhood will concur on this point." This is the bottom line, Mr. Chairman, for

the health and welfare of people under the flight path in Minneapolis and elsewhere in this Nation. They deserve relief from aircraft noise. Defeat this bill and let us get on with the job of reducing aircraft noise.

Thank you.

[Testimony resumes on p. 87.]

[Mr. Rockenstein's prepared statement follows:]

STATEMENT OF WALTER H. ROCKENSTEIN II, ON BEHALF OF THE NATIONAL LEAGUE OF CITIES

Good morning. My name is Walter Rockenstein. I am a City Councilman elected by the residents of the Eleventh Ward in Minneapolis, Minnesota. I am here today representing The National League of Cities of whose Environmental Quality Committee I am the immediate past-Chairman. With me today is Mr. Kevin McCarty of NLC's Office of Federal Relations.

INTRODUCTION

By way of background, the Ward I represent in south Minneapolis is under the main runways of Minneapolis-St. Paul International Airport, a major hub airport. Because of the severe noise impact on the 30,000 people who live in the 11th Ward, I have devoted considerable time over the last five years to the reduction of aircraft noise and to airport land use planning.

Progress on aircraft noise reduction has been painfully slow. Nevertheless, a federal regulatory framework is now in place and momentum has been established toward aircraft noise reduction.

The legislation before you for consideration, H.R. 3942, threatens all our past efforts. Bluntly, H.R. 3942 is a total sellout to the airline industry. It is an abandonment of the public interest. The bill's pretense is aircraft noise reduction, but its substance is a rollback of federal noise deadlines and a roadblock to future aircraft noise regulation.

It should be clear to the members of this committee what is happening. Most of the airline industry opposed FAR Part 91, the fleet noise rule when it was adopted by the FAA in late 1976. Most airline companies have deliberately chosen not to comply despite the ample lead time provided for retrofit or replacement of non-complying (Stage 1) aircraft. Now, at the eleventh hour, the industry is trying to muscle through Congressional delays in the compliance deadlines.

This irresponsible conduct is familiar to local public officials.

The auto industry delayed in meeting clean air standards. Congress bowed to the automakers, blamed local officials for cities designed for the automobile, and pointed the finger at local politicians to solve the problem. We now must take it on the chin locally with elaborate transportation control plans which do not sell politically and do not solve the problem at its polluting source--the automobile.

H.R. 3942 repeats this pattern by passing the buck to cities and airport operators. We are blamed for inadequate land planning, noise reduction deadlines are pushed back, and we are told to solve the problem.

In the case of Minneapolis and a majority of our nation's cities, I can assure you of two things. First, our land planning is not to blame for the aircraft noise problem. In most large cities land uses were decided decades ago, in some cases prior to the notion of air travel. In these cities the airport was the "last house on the block."

In other cities, like Minneapolis in particular, buffer land was provided around the airport during the days of propeller driven aircraft. The higher noise levels of commercial jet aircraft shattered these early efforts at responsible land planning. Indeed, many communities watched airports develop right up to the boundaries of residential areas to accommodate increases in air traffic and the longer runways required by larger and heavier jet aircraft.

Second, few cities can afford a land use solution to aircraft noise. Large scale rezoning and redevelopment in high noise impact zones around airports is not practical without billions of dollars for acquisition, relocation, demolition, and redevelopment.

Does Congress expect that the 6 million people living in high aircraft noise impact zones will move? If I am not mistaken, that is exactly what the supporters of H.R. 3942 are advocating, short of saying it. Is that a socially responsible and fiscally prudent federal policy?

No! Noise reduction at the source must remain the focus of federal policy. In adopting the fleet noise rule that requires all aircraft to meet FAR Part 36 standards, the FAA had to demonstrate that the regulation was technologically feasible and economically reasonable; and a few airline companies, acting in the public interest, are confirming the FAA's judgment by putting the technology in place.

The solution to aircraft noise is still principally at the source--the airplane. The National League of Cities strongly opposes any delay in implementing FAR Part 91 or other measures to reduce aircraft noise at the source. H.R. 3942 in its present form should be rejected.

We turn now to comments on specific titles of H.R. 3942.

TITLE I: IN GENERAL

Despite our opposition to H.R. 3942 as a whole, the League continues to support the thrust of Title I to assist airport operators and local units of government around airports with noise impact analysis, land use planning, and land use conversion. Our comments today indicate ways to strengthen Title I.

TITLE I: SECTION 102

First, we do not agree that the Secretary of Transportation should establish the noise measuring and noise exposure systems. The National League of Cities has seen the repeated failure of the Federal Aviation Administration to aggressively pursue noise abatement. We have watched

its insensitivity to local land use planning problems around airports. Consequently, our policy calls for the Environmental Protection Agency to be the agency to adopt noise standards.

This bill would be significantly strengthened if Section 102 designated the Administrator of the Environmental Protection Agency as the authority to issue the regulations on selecting the airport noise measuring systems, selecting the system which determines airport noise impacts on individuals, and designating the land uses compatible with various noise levels generated around airports.

Second, the National League of Cities favors the establishment of federal minimum noise impact standards and federal minimum land use compatibility standards.

To speak of federal minimum standards implies power for someone to set stricter standards. We maintain that, in the environmental areas, the Federal Government should set minimum standards and leave to state and local governments the option to impose stricter standards. This is, in fact, the pattern which has evolved in air and water pollution legislation. The same approach should be followed for aircraft noise pollution.

State and local governments should have the power to impose noise standards around airports more stringent than federal minimums unless such standards substantially interfere with interstate commerce. To this end, Section 102 should be amended to make clear that state and local governments may adopt stricter noise standards and use other airport noise measuring and enforcement systems as a supplement to the systems adopted by the Federal Government. Further, state and local governments should be able to improve the protection from noise of any land use by redesignating it as compatible with a lower level of noise impact on individuals than set at the federal level.

Let me use two examples to clarify this point. If the Federal Government decides that the LdN noise measuring methodology most precisely defines the noise impact on individuals around airports, this would be a valuable planning and implementation tool for nationwide use. However, since this system depends on a full year's data to establish the contours around airports, it would have limited effectiveness for day-to-day enforcement purposes. The Minnesota Pollution Control Agency, which has adopted a system based on L₁₀ and L₅₀ dba levels measured over any one hour period, should be able to use its regulations as a day-to-day enforcement tool in Minnesota.

Turning to land use, let us assume that the Federal Government adopts the NEF system of noise impact measurement and decides that apartment buildings are incompatible within the 35 NEF contour and above, but compatible within the 30 NEF contour and below. A state or local government should be free to decide that apartment buildings should also be incompatible within the 30 NEF zone, but compatible within the 25 NEF zone and below.

Our repeated experience in the air and water pollution fields with minimum federal standards and a state or local option for more stringent standards shows that the approach works. With due regard for avoiding substantial burdens on interstate commerce, it will work for aircraft noise as well.

TITLE I: SECTION 103

While NLC is pleased that Section 104 requires consultation with local governments in developing a noise compatibility program, we see the absence of local consultation under Section 103 as a serious fault. Consultation should also occur as the airport operator develops the current noise contours and underlying land use map, the projected 1985 operations, and the 1985

contours and land use map required by Section 103(a). Mandatory local consultation throughout the entire planning process will educate local governments about airport operations and aircraft noise problems, foster trust and understanding of the noise compatibility process, and promote reasoned land use decisions and zoning code modifications by affected local governments. Cutting local governments out of any part of the process will foster suspicion and reduce cooperation.

In the Twin Cities area, the very process suggested by Title I is being carried out cooperatively by local governments, the regional planning body, and our Metropolitan Airports Commission. A key factor in our success has been the early and constant involvement of local governments, which we urge be included in this legislation. There is no reason why the Minnesota experience cannot be repeated at other airports across the country. H.R. 3942 needs language in Section 103 which (1) mandates local consultation in the noise mapping process, and (2) makes local governments eligible to participate in planning grants.

TITLE I: SECTION 104

First, NLC opposes subsections (b)(1) and (b)(2) as written because they could invalidate existing noise compatibility programs. As a matter of fact, many airport operations, including Minneapolis, Boston, and Los Angeles, currently exercise their limited powers to reduce noise around their airports.

As the bill now reads, if the Secretary of Transportation were to disapprove the noise compatibility program submitted by any of these airports, their entire noise program would be illegal and could not be continued. The National League of Cities cannot support this approach. Instead H.R. 3942 should make clear that disapproval by the Secretary of Transportation of the program being submitted

does not invalidate the existing noise control programs in use at the submitting airport.

Second, EPA should have a much stronger role under the planning programs outlined in this Section. The League supports an equal partnership of EPA and DOT in this respect rather than the purely cosmetic role provided for in the current legislation. We also suggest that EPA be given authority to review and coordinate all planning activities not directly related to air safety which will be undertaken by units of local government surrounding an airport.

TITLE I: SECTION 106

First, the League questions whether the federal government can direct state courts not to receive noise maps in evidence.

Second, we oppose this section. It should be deleted. Instead, a provision making the federal government liable for aircraft noise damages should be inserted here.

TITLE I: SECTION 107

First, we again raise the constitutional question of how far Congress may go in directing the activities of state courts. Can state courts be directed not to award damages to persons acquiring property after a noise map submission unless certain conditions are met? Can the federal government set the conditions for constructive notice for state courts?

Second, this provision as written does not protect the home buyer. Instead it protects the airport operator, the federal government and the airline industry from liability.

The newspaper constructive notice provision is a joke. Simply printing a noise map in a general circulation newspaper three times does not give home buyers notice of noise. How will the buyer understand the implications of the map? What if the buyer comes from out of town a week after publication? What happens a year or two later? Are buyers to memorize and remember the noise contours?

Furnishing the buyer a map at the time of acquisition, i.e., closing is nearly as bad. By then the buyer has made a decision to purchase and will be reluctant to change.

Effective notice requires furnishing the map when the prospective buyer first views the property and a clear explanation of the meaning of the map for that place of property. Section 107 provides neither.

TITLE I: SECTION 108

EPA should be given the lead on the study of airport noise compatibility planning. As an advocate of compatible land use planning around airports, NLC believes EPA has the experience and the freedom from airline industry influence to offer a sincere and unbiased assessment.

TITLE II: SECTION 212

This Section should be amended to give EPA full responsibility to carry out research projects on the health implications of aviation noise, rather than DOT.

TITLE III: IN GENERAL

The roadblock and rollback provisions of Title III make this entire legislation a sellout to the irresponsible members of the airline industry. Let me review the key sections, and the League's objections.

TITLE III: SECTION 303

This provision limits the FAA's powers to require manufacturers to comply with stiffer noise standards for new production aircraft certificated prior to March 2, 1978, or for derived growth versions of previously certificated aircraft. The FAA is already moving too slowly with rulemaking in this area.

For example, Northwest Airlines recently placed an order for new Boeing 747's with a contract provision that they comply with Stage III noise regulations. Boeing agreed and has delivered the first aircraft under this contract.

Additional Congressional roadblocks and checkoffs will only prolong the rulemaking process. As Congressman Glenn Anderson said in his Minority Views on H.R. 3942: "There is no justification for the further delays which the amendment will require."

TITLE III: SECTION 305

The National League of Cities opposes any rollback of compliance deadlines for two and three engine aircraft. This patchwork scheme to pawn off non-complying aircraft to smaller commercial airports in the interest of insuring air service to small cities supposedly hit hard by deregulation is ludicrous.

First, if in fact this could be done, is it socially responsible to tell our small cities that you can have air service but you will have to put up with noise? Is this a fair U.S. policy?

Second, The League does not believe that this bill will in any way support increased air service to less profitable routes as it purports to do. The

major hub airports such as Los Angeles, Chicago, Atlanta, and New York are responsible for the bulk of enplaned passengers. As such it is certainly more profitable to operate the new generation of wide body jets out of these facilities for reasons of economy. Smaller jets will naturally service smaller airports. Thus, the apparent socially responsible ploy to guarantee air service to smaller communities is in effect a confirmation of the status quo and will not offer either relief from aircraft noise, or better airline service.

Third, people living around airports desperately need the relief from current aircraft noise or protection against potential aircraft noise increases offered by compliance with FAR Part 91 deadlines. Minneapolis offers a clear example.

Mr. Chairman, I have provided you and members of the Committee copies of the two charts I will now use to illustrate my point. The first relates to landing noise and shows two narrow elongated 65 Ldn noise contours with one inside the other. The larger solid line contour represents the actual landing noise impact area in 1977, the year just after FAR Part 91 was promulgated. The dotted line represents the projected 1990 65 Ldn noise contour under three assumptions: 1) all aircraft in compliance with FAR 36; 2) all aircraft use a split segment glide slope approach to maximize the benefits of the SAM retrofit kits; 3) an increase of 62,000 operations (23%).

As you can see, FAR 36 compliance and the use of operational procedures to maximize its benefits enables us to absorb our projected increase in operations and substantially reduce the number of people impacted. Without FAR 36 aircraft the increased traffic would expand the noise impact area.

Unfortunately, my second chart on takeoff noise shows a gloomier picture. Again the solid line represents the actual 1977 65 Ldn take-off noise impact area. And the dotted line represents the projected 1990 65 Ldn noise contour

under three assumptions: 1) all aircraft are in compliance with FAR 36; 2) all aircraft use the Northwest Orient Airlines quiet EPR takeoff procedure to maximize the benefits of the SAM retrofit kits; 3) an increase of 62,000 operations (23%).

On take-off FAR 36 compliance and operational procedures to maximize its benefits only holds the noise impact area relatively constant. Without FAR 36 aircraft the increased traffic would substantially increase the people suffering noise impact.

Fourth and finally, the airlines can comply with FAR Part 91 deadlines. Responsible airlines are doing it today. Again, let me use Northwest Orient Airlines as an example.

Northwest began its compliance program quietly in 1977 by retrofitting new engine nacelles on 12 early model Boeing 747's with noisy blow-in doors. FAR 36 standards were met and a fuel saving realized.

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This leaves Northwest with 19 727-100's which do not comply with FAR-36. If other airlines are exempted from compliance, then Northwest may choose to not retrofit these aircraft.

Here is a responsible company moving to meet the law. Will Congress now reward this company by giving those who deliberately ignored FAR Part 91 the competitive advantage of a compliance deadline rollback?

The League hopes not.

TITLE III: SECTION 306

A ten year prohibition on new noise requirements for an airplane after entering service is plainly a roadblock to progress on noise reduction. Any new modification no matter how small the cost or how great the benefit is prohibited. Ten years of technological progress are to be ignored. The National League of Cities opposes this head-in-the-sand provision.

TITLE III: SECTION 308

The League's National Municipal Policy calls for the federal government to "accept full responsibility for payment of damage claims resulting from aircraft pollution." Under this section the federal government begins to accept that responsibility. We support this section.

CONCLUSION

H.R. 3942 is a bad bill, a bill written by members of industry who really do not care about the impact of aircraft noise on Americans or the costs to our society. Its "Aviation Noise Reduction" title is a sham and a fraud.

Mr. Chairman, the Senate had a bill of similar irresponsible intent before it, and it passed with only 15 dissenting votes. Only 15 senators chose to reaffirm our country's commitment to environmental clean-up. Only 15 senators did not succumb to airline industry pressure. Only 15 senators voted in the public interest.

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If this bill passes the House of Representatives and is finally reported to the President, NLC will do everything in its power to secure a veto. If it is signed by the President and becomes law, I can assure this Committee that the number of local curfews will skyrocket together with any number of locally initiated tactics to prohibit the operation of non-complying jet aircraft.

In closing, Mr. Chairman, I would like to state some hard facts about citizens' attitudes towards noise pollution, facts compiled by the prestigious Gallup Polling Organization at NLC's request.

Fact #1 40% of urban residents think noise pollution is at least a fairly serious problem.

Fact #2 57% of urban residents think noise pollution is more serious now than five years ago.

Fact #3 48% of urban residents believe not enough is being done about the problem of noise in their community.

Fact #4 20% of urban residents believe noise is a health threat.

Fact #5 10% of urban residents said they wanted to leave their neighborhoods because of noise.

Fact #6 Urban residents rank quiet as the third most important element of an ideal neighborhood.

Mr. FLORIO. Of course, the National League of Cities has been in the forefront of concern about this problem.

I am interested in the experience in Minneapolis with regard to the Northwest Airlines changes. Has there been any noticeable objective evaluation in terms of reduction of noise? Has anyone done any monitoring? Has there been any reduction in complaints? What has been the experience as a result of these new operations?

Mr. ROCKENSTEIN. We can offer a fair amount of evidence, Mr. Chairman, to support the efficacy of the Northwest Airlines takeoff procedure. The Minnesota Pollution Control Agency for 2 years monitored noise levels around Minneapolis-St. Paul International Airport. It was their finding that Northwest Airlines, once they reached the point of quiet cutback, drawing back the power on the aircraft, was consistently quieter than any other airline company operating. This was true until North Central adopted essentially the same procedure, at which point it became also a quiet operating airline.

Mr. FLORIO. Are you attributing the reduction in noise to the mechanical retrofitting, or are you talking about procedures, or a combination of both?

Mr. ROCKENSTEIN. It is a combination of both, Mr. Chairman. We have actually been able to determine—since Northwest flies both planes that are in compliance with FAR 36—that have been retrofitted, and aircraft which are not—that in both cases it makes a

difference. The quiet takeoff procedure makes a difference on the noncomplying aircraft. But if the aircraft complies with FAR 36, you get even a larger noise reduction for people under the flight path. This evidence is now being confirmed by the airport commission itself, which is conducting daily monitoring around the airport. They are getting the same results out of their monitoring.

Mr. FLORIO. We will be pleased to receive any of that information as soon as it is quantified.

Mr. ROCKENSTEIN. I will try to have our pollution control agency provide that for you. The airport commission probably has not quantified it in tables yet, but we may be able to get you some preliminary information.

[Testimony resumes on p. 99.]

[The following material was received for the record:]



October 18, 1979

Hon. James J. Florio, Chairman,
Subcommittee on Transportation & Commerce
of the House Committee on Interstate
& Foreign Commerce
3150 House Annex #2
Washington, O.C. 20515

Chairman Florio:

Enclosed is a copy of a letter from Captain Jerry T. Fredrickson, Director of Flying Operations for Northwest Airlines, to Mr. Lloyd Hinton, the Executive Director of the National Organization To Insure A Sound-Controlled Environment (NOISE), concerning tests conducted on September 10, 1975 and October 31, 1975 by Northwest Orient Airlines.

As you can see from the letter, the September 10, 1975 tests were intended to compare the Northwest Airlines' take-off procedure to the Air Transport Association's recommended take-off procedure using Boeing 727 aircraft. None of the aircraft in the September 10th test had been fitted with quiet nacelles. This test illustrated that the Northwest Airline's procedure is quieter than the ATA procedures at a point 30,000 feet from brake release. Subsequent tests by the FAA and independent groups have confirmed these early results.

Between September 10th and October 31st, Northwest took delivery of eight new 727-200A aircraft powered by JT80-15 engines with quiet nacelles. On October 31st, a second test was conducted to determine whether the quiet nacelles enhanced the effectiveness of the Northwest Airlines' procedure. The details of this test are shown on the last page of Mr. Fredrickson's letter.

Comparing the results of these tests demonstrates the impact of the quiet nacelle on older, noisier aircraft. The September 10th test shows that the NWA procedure alone cuts noise by 3 to 4 EPNdB. The October 31st test shows the procedure on a quiet nacelle-equipped aircraft cuts the noise 11 to 13 EPNdB. Clearly, the quiet nacelle dramatically cuts aircraft noise levels when combined with the proven NWA quiet take-off procedure.

I hope this will add to the record of the public hearing which you are now compiling.

Sincerely,

Walter H. Rockenstein

Walter H. Rockenstein II
Aldermen, 11th Ward



NORTHWEST ORIENT

Minneapolis-St. Paul International Airport St. Paul, Minnesota 55111

November 20, 1975

Mr. Lloyd Hinton
 Executive Director
 N.O.I.S.E.
 4620 Wisconsin Avenue, N. W.
 Washington, D. C. 20016

Dear Mr. Hinton:

Northwest Airlines' Flight Operations Department wishes to thank you for your participation and interest in the noise abatement tests conducted September 10, 1975, at the Minneapolis-St. Paul International Airport. Much preparation, organizing, planning, etc., went into the test. It was our feeling the test should be conducted in a manner which would allow anyone interested to observe and listen at a location of his own choosing and allow time to change locations during the test without missing a portion. The communications system set up functioned perfectly. The VHF communications with the test aircraft also worked well. The recording equipment, photography equipment, etc., all functioned as planned. In short, we tried to conduct the test in an open and honest fashion before everyone present in a sincere attempt to provide some answers which will serve the industry in its attempts to eliminate unnecessary aircraft noise.

PRELIMINARY

The attached charts compare community noise levels near Minneapolis/St. Paul International Airport for the 727 aircraft performing take-offs using two different takeoff flight procedures. The first procedure shown is the Northwest Orient Airlines standard take-off flight procedure which has been in use by NWA for all aircraft for several years. The second procedure is the ATA takeoff flight procedure which is used by most airlines other than NWA.

During the test period which was from 7 a.m. to 11 a.m. September 10, 1975, ten 727 aircraft performed takeoffs using the ATA procedure and twelve 727 aircraft performed takeoffs using the NWA procedure. The aircraft were performing primarily scheduled flights but include two controlled ATA departures and two controlled NWA departures. No aircraft were omitted from the data analysis even though several departures to the ATA procedure were at noise levels attributable to thrust settings lower than normally used maximum climb ratings.

CONCLUSIONS

The test at MSP on September 10, 1975, demonstrated that the NWA procedure is quieter over the community once the aircraft is in a flaps up configuration and quiet EPR has been attained. For the sample of aircraft observed during this test, the noise level at the 30,000 foot (outside) location was 3.5 dBA quieter under the NWA procedure than with the ATA procedure. After the NWA aircraft reapplied thrust (50,000 foot location) the two procedures produced about the same noise levels. If the reapplication of thrust had been delayed until the aircraft was past the 50,000 foot location, the NWA procedure would have continued to have produced noise levels below those produced by the ATA aircraft group.

The test may not represent a conclusive comparison of the two procedures because:

1. Unusual or extreme weather conditions existed on the test day.
2. Average levels for both procedures were slightly higher than expected.
3. The measured noise reduction between the NWA and ATA procedure outdoors at 30,000 feet was 3.5 dBA compared to a 6 dBA anticipation. Indoors, the reduction was 6.7 dBA.
4. Announcement of the test before test day could have biased the results.
5. Noise levels were only recorded under the flight path.

LOCATION OF NOISE MEASUREMENT

The locations for noise measurement were under the flight path for takeoffs performed on Runway 22 which was the only runway in use on test day. Distances from brake release to the microphones were 18,000, 30,000 and 50,000 feet with all aircraft maintaining the 220° heading until past the 50,000 foot location. Two microphones were used at each location, one inside and the other outside typical buildings. This report examines the noise levels at the 30,000 foot location and the 50,000 foot location.

Both outside microphones were placed in unobstructed locations and supported by music stand tripods 4 feet above the ground. At the 30,000 foot location, the inside microphone was inside a church on a tripod, also 4 feet above the floor and away from the walls and windows. At the 50,000 foot location, the inside microphone was in a typically built residential home also on a tripod, from where the family normally views television.

INSTRUMENTATION

The microphones at each test site were one-inch free-field condenser microphones oriented with the axis of rotation vertical and located 4 feet above the surface level. Each microphone had a protective grid and was covered with a plastic foam windscreen.

Battery-operated preamplifiers transmitted the microphone data via cables to the tape recording systems. Amplification was applied to the signal in 10 dB steps for recording on portable audio tape recorders. An acoustic calibrator was placed on each microphone, the gain adjusted and the signal recorded on tape for a data reference level. A sinewave voltage was also recorded on each reel of tape for a sensitivity check. During analysis, the calibration, 10 dB gain steps and appropriate response corrections were used to determine the sound level. A stopwatch was used to time from an announced mark on the data tape to airplane overhead to provide airplane position information.

RESULTS

The charts show the distribution of noise level values as measured on test day without adjustment in noise level for atmosphere conditions, takeoff weight and actual flight profiles flown, all of which can significantly affect the noise level measured. Atmosphere conditions were considered poor and the average noise levels measured were higher than those anticipated for both procedures. A vertical wind shear of 60 knots at 3000 feet to zero on the ground existed at one period of the test. Temperature was steady at about 60°F to 3000 feet and the humidity varied from 96% at the surface to 67% at 2400 feet and rising again to 86% at 5000 feet. These atmospheric conditions were measured at only one time during the test and were obviously varying in the near presence of thunderstorms.

The data shown in Figures 1, 2, 3 and 4 is taken from analysis of the data tapes. The tapes were processed on a General Radio (Model 1921) 1/3 octave band analyzer which creates sound pressure levels every half second for each of 24 center band frequencies. These 24 values are used to produce a dBA value every half second and hence the dBA time history of the flyover. The 24 values are also used to produce a tone corrected perceived noise level every half second and hence an EPNdB for each aircraft flyover.

Figure 1 shows the maximum dBA values inside and outside the church for the two groups of aircraft. The NWA aircraft group shows an average of 3.5 dBA quieter (6.0 estimated) outside and 6.7 dBA quieter inside than the ATA aircraft group. The attenuation through the wall

of the church was 27.6 dBA for the NWA and 24.4 dBA for the ATA aircraft group. Figure 2 shows similar results as Figure 1 but in EPNdB. The data analysis shows a 3.3 EPNdB advantage for the NWA procedure outside and 7.4 inside. The duration of the flyover is less for the NWA procedure (lower altitude, less low frequency noise, and higher speed lowers the duration time).

Figure 3 shows the maximum dBA values at the 50,000 foot location where most aircraft flying to the NWA procedure have increased thrust to maximum climb rating. Both inside and outside noise levels in either dBA or EPNdB are similar for the two aircraft groups. Again, if the reapplication of thrust had been delayed until the aircraft was past the 50,000 foot site, the NWA procedure would have produced lower noise levels.

The alternate procedures "A", "B" and "C" flown during the test are being reviewed. In general, initiating full clean up at 800 feet instead of 1000 feet (Proc. A) did not provide an appreciable change in the cutback location. Cutback with partial flap retraction (15° to 5°) did move the cutback location significantly as predicted but with a smaller noise reduction than with full flap cleanup.

The next test will be conducted under weather conditions that will permit a more accurate determination of the results. There will also be some modification to the procedures used. The winds and humidity during the test September 10th made it extremely difficult, if not impossible, to arrive at anything that could be considered conclusive. Ground level winds averaged approximately 5 kts. headwind component; at 2000 feet AGL a 20-25 kt. headwind component existed; at 4000 feet AGL a 55-60 kt. headwind component existed. This is a wind shear of significance. A large thunderstorm passed by approximately 10 miles from the airport during the test, moving in a northeasterly direction. The associated gust front further contributed to the wind problem. Three NWA INS-equipped DC-10's and one 747 verified the wind shear conditions existing. Humidity levels also varied a great deal.

The scatter in the data collected is evidence of the wind problem. For example, the altitude of the test aircraft varied as much as 710 feet over site No. 3 using the same procedure and at approximately the same gross weight. Therefore, it is our feeling further tests are necessary.

Northwest Airlines takes delivery of eight new 727-200A type aircraft this year. These airplanes are powered by the JT8D-15 engine with quiet nacelles. October 31st, a short noise abatement test was conducted to determine the effectiveness of the NWA procedure for the new aircraft. The aircraft was flown by myself, Captain E. J. Johnson -- our Manager of 727 Training -- and Mr. G. N. Doan -- our Assistant Director - Flying Operations. The laboratory processing of the noise recordings made is now complete.

The under the flight path location of the monitors was 25,500 feet from brake release, and the sideline location was 2300 feet to the side of this point.

<u>Flight Procedure</u>	<u>BRGW</u>	<u>Alt.</u>	<u>Vel.</u>	<u>Under Flight Path</u>		<u>Sideline</u>	
				<u>dBA (Peak)</u>	<u>EPNdB</u>	<u>dBA</u>	<u>EPNdB</u>
ATA	149,000	3400	190	94	104	90	100
NWA	145,000	2400	205	81	91	79	86
ATA	141,000	3450	190	91	101	89	98
NWA(mod)	137,000	2200	210	79	90	76	87

Note: These values are exactly as recorded during the test with no adjustments or corrections for existing ambient conditions.

Audio tapes of these flyovers are available.

We feel that the tests conducted September 10th and October 31st will contribute to the knowledge that is required and useful in determining effective noise abatement procedures for airline-type aircraft. We further appreciate your concern and interest in NWA's continuing endeavor to improve our operations and reduce community noise. If you have any questions on our tests on the date of this report, I will be pleased to provide additional assistance.

Sincerely yours,

NORTHWEST ORIENT AIRLINES



G. T. Fredrickson
Director - Flying Operations

NWA MINNEAPOLIS-ST PAUL AIRPORT NOISE MEASUREMENTS
MAXIMUM dBA VALUES AT 30,000 FEET FROM BRAKE RELEASE

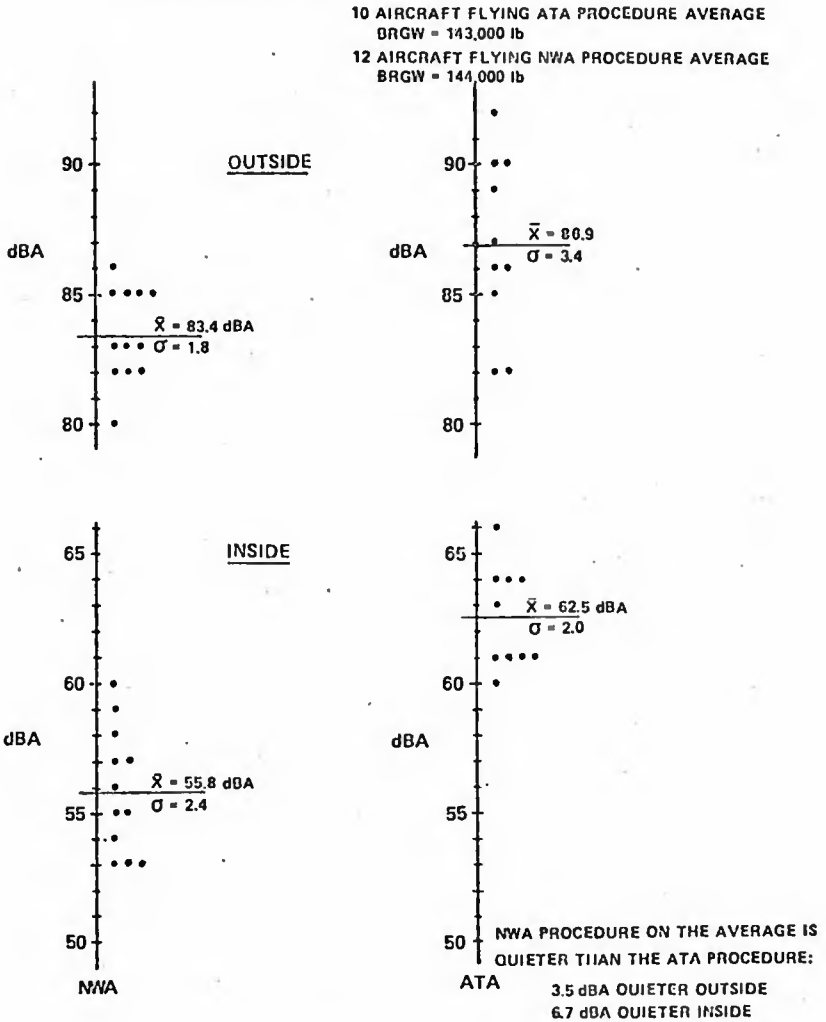


FIGURE 1

NWA MINNEAPOLIS-ST PAUL AIRPORT NOISE MEASUREMENTS
 EPNdB VALUES AT 30,000 FEET FROM BRAKE RELEASE

10 AIRCRAFT FLYING ATA PROCEDURE

AVERAGE BRGW = 143,000 lb

12 AIRCRAFT FLYING NWA PROCEDURE

AVERAGE BRGW = 144,000 lb

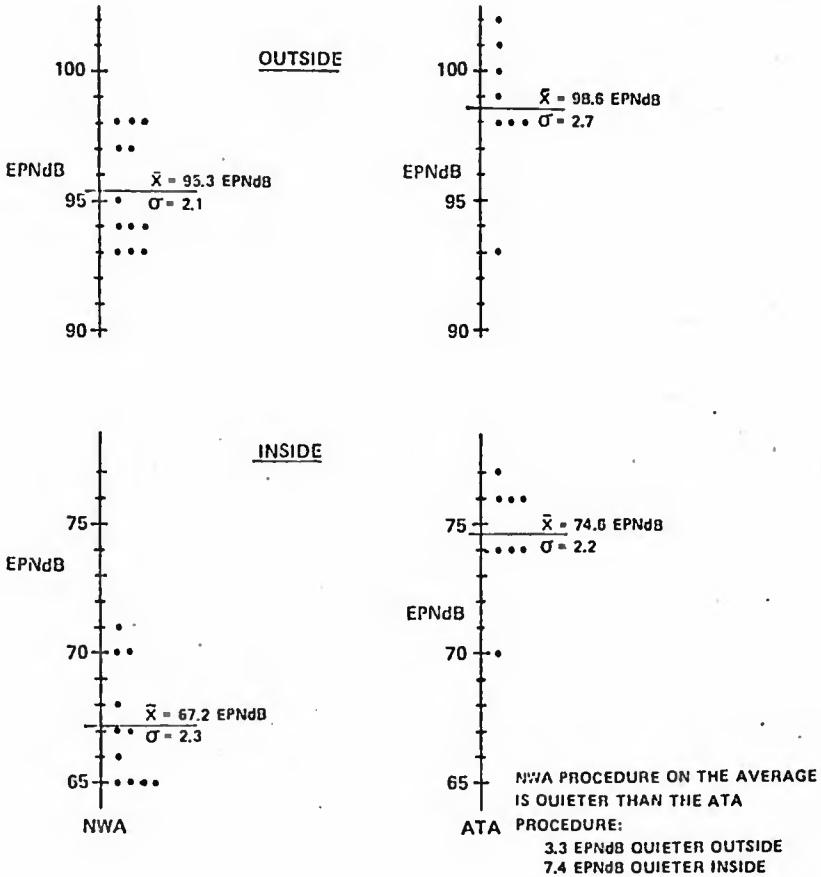
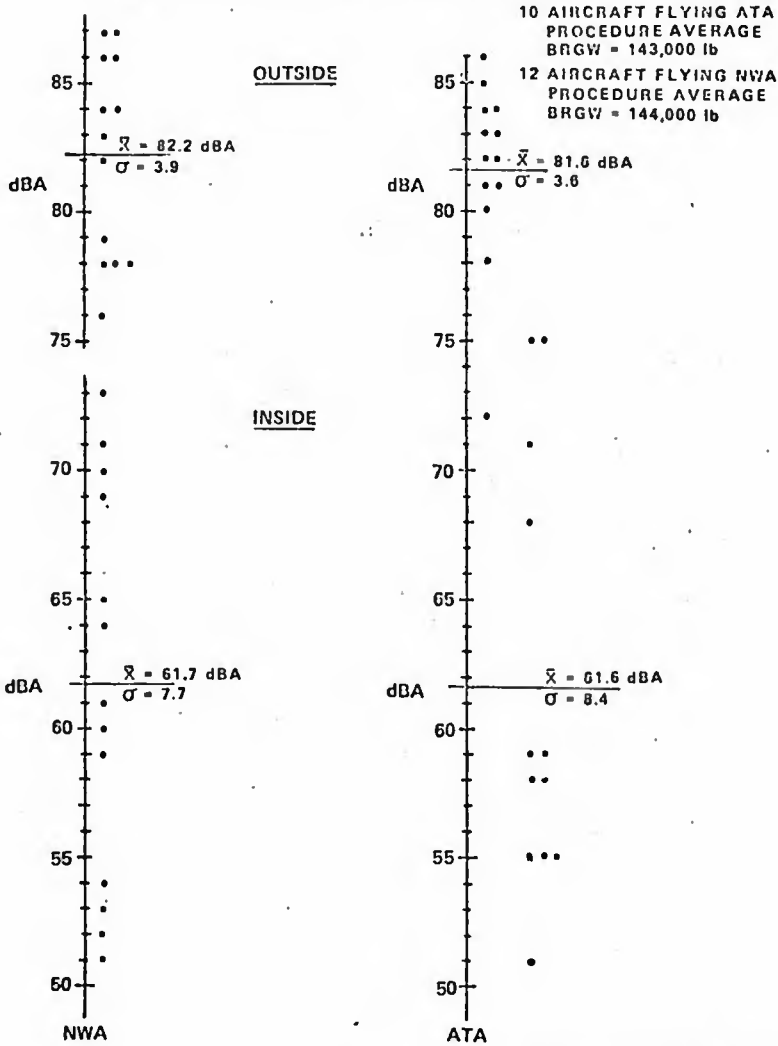


FIGURE 2

NWA MINNEAPOLIS-ST PAUL AIRPORT NOISE MEASUREMENTS
MAXIMUM dBA VALUES AT 50,000 FEET FROM BRAKE RELEASE



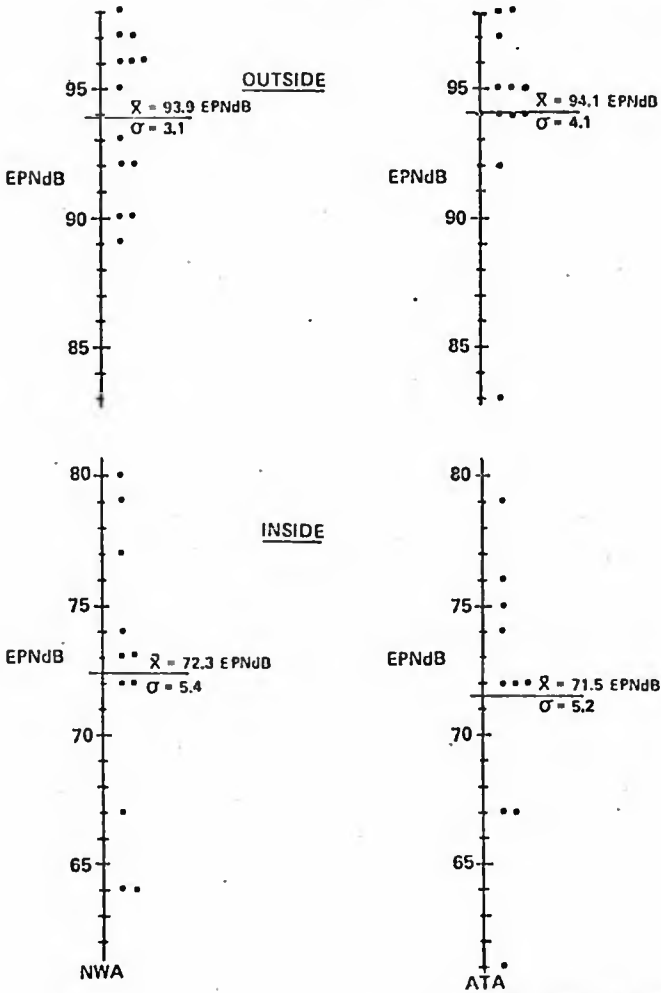
THE NOISE DIFFERENCE FROM THE TWO
 PROCEDURES IS LESS THAN 1 dBA
 (INSIDE AND OUTSIDE)

FIGURE 3

NWA MINNEAPOLIS-ST PAUL AIRPORT NOISE MEASUREMENTS
EPNdB VALUES AT 50,000 FEET FROM BRAKE RELEASE

10 AIRCRAFT FLYING ATA PROCEDURE AVERAGE DRGW = 143,000 lb

12 AIRCRAFT FLYING NWA PROCEDURE AVERAGE DRGW = 144,000 lb



THE NOISE DIFFERENCE FROM THE TWO
 PROCEDURES IS LESS THAN 1 EPNdB
 (INSIDE AND OUTSIDE)

FIGURE 4

Mr. ROCKENSTEIN. Citizens do notice the difference. At our last meeting of the Metropolitan Aircraft Abatement Council there was a gentleman from one of the areas around the airport who asked, "Why is it that Northwest Airlines is quieter when it comes over my house than everybody else?" He lives beyond that point where power cutback is made. He was wondering why the other airlines could not achieve this same degree of quiet.

Mr. FLORIO. You made a representation that fuel efficiency was improved as a result of the new approach of this particular airline. Is there any way to determine what fuel efficiency improvements will result from the retrofitting, or the techniques and procedures, or a combination of both?

Mr. ROCKENSTEIN. On the 747's that I referred to, the replacement of the nacelle, the fuel saving there was entirely as a result of the retrofit and it was on top of the fuel saving that comes from the procedure.

On the older aircraft, the 727-200 and 100, Northwest has informed me that there is a very slight penalty for the retrofit kit on fuel, but they more than make up for that with their operational quiet takeoff. On that they have a fuel saving.

Their estimate in 1977 was that their takeoff procedure in that year saved them \$1.5 million worth of fuel just by using the quiet takeoff procedure.

Mr. FLORIO. Thank you very much for your help and your statement. It is very valuable.

Mr. ROCKENSTEIN. Thank you very much, Mr. Chairman, for representatives.

Mr. FLORIO. I would like to call Panel 4: The Honorable Clive Duval, State senator from the State of Virginia; the Honorable Francis Witt, mayor of National Park, N.J.; and Ms. Mona Thaler, coordinator, Runway 27 Coalition of Boston, Mass.

We welcome you to the committee.

I would like to acknowledge the presence of Mayor Witt, a mayor of one of my communities, who has been very forceful in his concern about this particular problem. National Park is located on the river, directly across the Delaware from the Philadelphia International Airport, so he speaks with great expertise about the impact of noise on the community.

Mayor Witt, we welcome you here.

STATEMENTS OF FRANCIS A. WITT, MAYOR, NATIONAL PARK, N.J.; HON. CLIVE L. DUVAL, 2d, VIRGINIA STATE SENATOR; AND MONA THALER, COORDINATOR, RUNWAY 27 COALITION

Mayor WITT. Thank you, Mr. Chairman. My remarks will consist basically of comments and problems of my constituents. I will address this to Mr. Florio.

As the mayor of the borough of National Park located in Gloucester County, N.J., my testimony strictly addresses itself to a long-standing problem experienced by the residents of our community: aviation noise.

National Park is a small, rural community of 1 square mile, densely populated—3,780 residents—with approximately 1,000 homes. We are located in the northern part of Gloucester County

on the Delaware River, directly adjacent to the Philadelphia International Airport.

Although I am totally aware of the importance of the airport to the metropolitan area, I have long been an opponent of the flight patterns across our community and have on a number of occasions, Mr. Chairman, requested that you have the traffic pattern redirected. The results were good, because you did assist us in that endeavor.

I would like to take a moment to explain the normal flight pattern across National Park.

The normal flight pattern crosses the neighboring township of West Deptford, then circles, coming up the Delaware River, which is parallel to our community. The residents living along the Delaware River have complained considerably about the noise of the jet engines. They cannot talk on the phone, listen to the radio or television. They have even had their children awakened from a sound sleep due to the noise level. They must, in fact, keep their windows closed and doors shut in order to maintain some semblance of quiet.

When I was asked to testify, I casually remarked that I am used to the sound of jet engines, but fortunately for me I do not live on the Delaware River. It seems the further away you go, the less the noise. I have personally noticed some of the effects of the noise of the aircraft when speaking to my wife via the telephone from my office in Woodbury. It is quite impossible to talk when they are flying overhead.

On election day, June, 6, 1979, our borough clerk, Eileen Durning, prepared a six-question opinion survey which was placed at the various polling places. This survey asked what the residents themselves thought of the noise problem created by aircraft. I would like to take this opportunity to read what the questions were and what the random sampling of residents answered:

One: In your opinion, do the airplanes fly too low over National Park? Answer: Yes, 125; no, 45.

Two: In your opinion, do airplanes generate too much noise? Answer: Yes, 167; no, 20.

Three: In your opinion, do airplanes interfere with the reception of television, radio, et cetera? Answer: Yes, 98; no, 56.

Four: In your opinion, do airplanes cause vibrations in your home? Answer: Yes, 56; no, 34.

Five: Airplanes cause no problems in your home? Answer: Yes, 48; no, 137.

Six: Your private comments on this survey: Answers were given: (a) Better flight patterns should be established; (b) noise controls should be required on planes; (c) higher flight patterns should be established; and (d) concern for a possible tragedy occurring due to low-flying aircraft.

The survey was conducted during a 3-hour period and was given to 200 persons for their answers.

To take the survey one step further, the borough clerk, Eileen Durning, asked a sampling of our senior citizen population whether or not they were bothered by the noise of airplanes. The majority of them answered that they were indeed bothered by the noise and vibration of the low-flying airplanes. This made some of them very nervous and woke them several times a night from their sleep.

I find that I must bring to your attention that during my 8 years as mayor of National Park it has been repeatedly asked by various residents of the community what would happen should an airplane

malfunction occur causing a crash to happen. I have no answer for them, other than trying to keep the flight pattern away from our community. However, should a crash occur, it would probably wipe out a good portion of the residents of National Park, because our town is so congested. This is of great concern considering what happened recently in Chicago. They have a justifiable fear and so do I.

I strongly urge you and your committee to push for some form of legislation that would do two things: (1) Have flight patterns removed from residential sectors where possible; and (2) require the airline industry and manufacturers to redesign airplanes so that they have quieter engine noises. This could possibly be subsidized by Federal money, or whatever else it takes to do the job.

In closing, let me say that it has been a pleasure to be asked to speak before this committee and I can only hope that something can be done to relieve the people of this burden in the very near future. Thank you.

Mr. FLORIO. Thank you.

Mr. DuVal?

STATEMENT OF HON. CLIVE L. DUVAL, 2d

Mr. DuVAL. Thank you very much, Mr. Chairman.

I appreciate very much the opportunity to appear before this distinguished subcommittee and to present my views on certain aspects of H.R. 3942, the Aviation Safety and Noise Reduction Act.

I am Senator Clive L. DuVal, 2d, representing part of the Arlington-Fairfax-Falls Church area of northern Virginia. I am also president of a broadly-based citizens' organization known as "Virginians for Dulles," with more than 1,000 members spread along the Virginia shore of the Potomac from Alexandria through Arlington into McLean. We also have some members residing in the District of Columbia and Maryland. My organization has been in existence for more than a decade, with the general objective of increasing the enjoyment of life and property in the Washington metropolitan area by diminishing the heavy noise burden upon residents of the area resulting from overutilization of National Airport by commercial jet airliners.

Many of my constituents, whether as members of "Virginians for Dulles" or not, live under the wings of the jets utilizing National Airport. They are part of the 150,000 residents of the metropolitan Washington area who are constantly harassed by aircraft noise and have been condemned to exist in what can best be described as a veritable noise slum. Many of these 150,000, I might add, live on land impacted by aircraft noise levels normally deemed unacceptable for new residential construction loan guarantees by the Department of Housing and Urban Development.

In consequence, I and my constituents and supporters have been fighting for more than 10 years to obtain relief from the intolerable aircraft noise burdens cast upon us. We have been and still are in litigation with the FAA about present operational policies for National Airport. We believe, for example, that some aircraft flights could be transferred from National to Dulles or Baltimore-Washington Airports, both of which are presently underused, without inconvenience to residents of the Washington metropolitan area.

The curfew at National should be strengthened. Procedures for takeoffs and landings at National should be further tailored to reduce noise impact upon surrounding communities, along the lines of what Northwest Orient Airlines is doing in Minneapolis, Minn.

But these proposals are not germane to the bill before your subcommittee, and in the long run legislative action to require that the aircraft using National operate more quietly may be more valuable to the scores of thousands who suffer from aircraft noise in this area than anything else that can be done.

Thus we believe that the legislation before you is tremendously significant. I note that the Senate has already passed S. 417, which, in effect, by its title III provision, guts the quiet fleet rules now in effect requiring all aircraft not now complying with part 36 noise levels to meet these levels either by retrofit or re-engining by January 1, 1985. I am also aware that the title III provisions of House bill, H.R. 3942, while preferable to those of the Senate version, seriously weaken the fleet noise rule. Apparently, if the House version of title III becomes law, millions of flight operations per year—including flight operations into Dulles and National Airports by noisy, two- and three-engine jets such as the Boeing 727 and 737—might be exempt from compliance with noise standard for many years to come, that is, into the 1990's.

Therefore, I strongly urge this subcommittee to reject any of the provisions of title III of H.R. 3942 that weaken present quiet-fleet rules. These rules were the outcome of years of careful research and planning; the modifications are ones that the Department of Transportation and the FAA have stated they do not need or want; and millions of members of the public who now suffer under serious aircraft noise burdens will be denied the long planned relief to which they are entitled.

I feel, and my constituents feel, that the present noise regulatory process is a reasonably phased program. The airline industry is booming, with profits in 1978 amounting to \$1.6 billion. The industry can afford to take the steps necessary to comply with noise standards and does not need the proposed title III "breaks" which can come only at the expense of the public and its well being.

I note also that several public-spirited airlines like Northwest Airlines and others have announced that they will comply with noise regulations. Why should airlines which have not complied and have not spent the necessary funds be granted waivers and thus preferred over those ready to meet the requirements of the law?

I urge this subcommittee, therefore, at the full committee markup, or in drafting the new bill, to stand firm for title III provisions which retain the status quo with regard to present fleet retrofit or re-engining schedules, in order to increase bargaining power at later House-Senate conference sessions; and I urge those of you who are conferees to hold firm for this goal at such conference sessions.

One last comment: I ask the subcommittee to delete the provisions of section 106 of H.R. 3942 providing that noise exposure maps and the Secretary of Transportation's list of compatible land uses not be received in evidence in any court proceeding.

In conclusion, may I just add one comment? Unless title III can be eliminated or revised so as to keep the present standards in effect, then I would certainly agree that we would be far better off having no bill at all. I hope that that will be the position that this subcommittee and the full committee will take in this matter.

Mr. FLORIO. Thank you very much.

Ms. Thaler?

STATEMENT OF MONA THALER

Ms. THALER. Thank you for inviting me to testify before the subcommittee. My name is Mona Thaler from Brookline, Mass. I am a coordinator of the Runway 27 Coalition, a group of citizens presently working with the Federal Aviation Administration and the Massachusetts Port Authority to reduce airplane noise over our communities. These communities are: Brookline, Jamaica Plain, and West Roxbury, which are southwest of Logan International Airport.

Over the past 4 years we have had a 200-percent increase of noise over this general area. Flights on runway 27 have more recently been rerouted over large areas of heavily populated Brookline and West Roxbury in an attempt to relieve residents in Jamaica Plain. These residents were not relieved, since the planes now bank and turn over Jamaica Plain, producing even more noise than previous straight flights had. Yet these increases and unsuccessful paths remain in effect. Since we receive noise from many other runways as well, we are desperately trying to work out alternate routes relieving these areas.

These used to be quiet, peaceful communities when we moved in. Now people are trying to sell their homes; children are frightened to be out in their own backyards; windows are rattling; health is suffering; sleep is disturbed. Nobody in these neighborhoods needs alarm clocks anymore. The increasing airplane noise hurts most of those people who can fight to decrease it the least. I am speaking of our children, those born and yet unborn, our grandparents, the elder citizens of this country, and, finally, of those who already bear the unfortunate burden of illness and are confined at home and in hospitals. This picture can be seen in most Boston neighborhoods around Logan.

The Federal noise regulations, passed into law in 1976, were the first tangible pieces of evidence that our Government cared at all about those people adversely affected by airplane noise. We, the victims of this noise, require that the existing regulations be allowed to remain as they are; further that they be complied with according to the original timetable; 1985 is already too long to wait.

Are our representatives going to bow to the financial demands of the airline industry now in the 1970's as they did in the 1950's to the automobile industry's requests for deferment of compliance with automobile emission standard timetables? How much additional pollution have we breathed because of that kind of action? What kind of environmental damage has been done irreparably? Do not make the same mistake twice. Let hindsight teach us a lesson.

The regulations contained in part 36 definitely do make a difference in terms of less noise. Ask those of us who have runways over

our heads. The newer planes are perceivably quieter. If the proposed waivers delay the requirement for four-engine aircraft from 1985 to an uncertain date in the future, we the people will be forced to tolerate the roar and whine of 707's and some DC-8's—these the loudest of the loud—forever.

If the Stevens amendment simply redefines aircraft that comply with regulations by increasing allowable decibel levels, all DC-9's will automatically be permitted to fly as they are, and that is, loud. This would be done by the stroke of a legislative pen, rather than by the originally proposed retrofitting.

Retrofitting itself was a compromise, a compromise allowing the airline industry to simply revamp existing aircraft rather than buying new ones. This was a compromise to save the airline industry money. Retrofitting is not expensive—in Boston costing, with financing incentives, less than \$1 per engine for every person relieved of the high range noise—compared not only with the cost of purchasing all new aircraft but also compare with the price in human suffering which many people in this country will be asked to pay if these planes are exempted from part 36, Federal Noise Regulations.

The existing regulations of part 36 are themselves not good enough; however, it is the best that we have and that is 100 times better than nothing, which is all that the waivers proposed by Senator Cannon would leave us. Earlier this year I testified before the Boston City Council and then again at the Statehouse hearings, as being against the proposed restructuring of Massport in Boston. Like part 36, Massport is not all we would ideally want it to be at all times, but it is the best port authority we have had to date. Likewise, part 36 is the best regulations we have had to date.

You, the Government, made a commitment to the people in 1976 in the form of these Federal noise regulations. How can you so casually consider breaking this covenant with your constituents? This is especially reprehensible at a time when government seems to be trying to be more responsive to correcting any suffering caused by bad decisions in the past.

Passage of this bill, H.R. 3942, and S. 413 already passed, would further undermine negotiations which those of us in the community are having with the FAA. It would create an enormous credibility gap. At this time, after the tragic DC-10 crash in Chicago, we would expect you to be formulating new regulations designed to avoid a similar accident taking place over highly populated areas, to be formulating new routes away from homes, hospitals, and schools when flying at low altitudes at takeoff and arrival. We would not expect you to be scrapping regulations designed to protect the people in another area as you are now doing.

On the other hand, our Government urges us to save gas, to move closer to cities and public transportation. It spends our money to revitalize our cities. On the other hand, it proceeds to make our urban areas unlivable by actions such as those now here under consideration.

We beg you to consider the long-term impact on the people, the increased traffic, the noisier planes, the interrupted education, the increased health hazards. We beg you not to take away our only

legitimate tool in our struggle to live with airplane noise. Do not leave us defenseless.

Live up to your obligations to us. For the sake of the people, for the sake of the future of a more livable country, decide in favor of human values, not financial ones. Thank you.

Mr. FLORIO. Thank you very much.

Mayor WITT, it is my recollection that most of the adverse impact of noise from operation of the Philadelphia International Airport in the National Park area is from landing, is that correct?

Mayor WITT. Mr. Chairman, there is a variation of noise because of size of different aircraft. On the approach coming into International from some of them you get a screeching sound, I think the 727's and 707's. On the large aircraft, the 747, the noise level is very low. The 727 and the 707 appear to have the most devastating effect on our community, not only on takeoff but also mostly on landing.

On occasion, there is a burst that comes out of the airport. I am not sure what that is; it is quite a loud noise.

Mr. FLORIO. As you may know, EPA and FAA are cooperating in an 18-month study which commenced last week, doing some monitoring and making some recommendations for changing procedures, rerouting limitation of profile descent, and keeping the airplanes higher for a longer period of time.

It is my recollection that there will be some monitoring done in National Park under this demonstration project. We may very well have the opportunity to be the first in the Nation in terms of formulating some appropriate responses.

Mayor WITT. When the gentlemen are in the community, I think it would be to their benefit to talk to some of the residents on the Delaware River.

Mr. FLORIO. Part of the study is a community and attitudinal survey. So I am sure they will be making contact with you directly.

Mayor WITT. Thank you.

Mr. FLORIO. Senator, I am aware of the fact that you and some of the people you represent have been involved in litigation with the airport authority. Can you give us an opinion as to the proposed prohibition on the use of noise maps or what impact it would have in litigation either in process now or that which may be undertaken?

Mr. DUVAL. Our litigation has wound down to the point that we obtained a requirement that FAA file an environmental impact statement regarding its operations at National and Dulles. They have submitted a preliminary environmental impact statement. They are now presumably formulating a final one.

So that litigation is out of the way.

My general feeling is that we in our area have lost confidence in the ability of either the FAA or Congress to protect us, and that we have had to go to court to try to do that ourselves. We may have to go to court again. That is why I feel that any possible evidence that might be useful to us should not be withheld by law from us, or other citizen complainants, of course. I hope we don't have to go to court again. Citizens don't have that sort of money.

The funds that we raised for our first suit came in mostly small contributions from hundreds and hundreds of people. I hope that we don't have to go that route again.

There is one provision in H.R. 3942 that I think is a good one which requires the Secretary of DOT and the Administrator of FAA to submit a noise exposure map for National and Dulles airport, plus noise compatible programs for these airports. This has not been required before, and so far as I know the Federal authorities have never developed this type of information for these two federally owned airports.

These are the only two airports, as you know, in the country owned by the Federal Government. So we do like that provision, and we would hate to not be able to use those maps if we have to go to court again.

Mr. FLORIO. Ms. Thaler, I was interested in your observation that the new complying airplanes have resulted in a noticeable reduction in noise. Would you amplify on that point?

Ms. THALER. In Boston, Delta has been one airline which has complied. Again, when you look up and see a Delta plane, it is noticeably quieter than the planes which preceded and followed it on the same day on the same approach with the same atmospheric conditions.

Mr. FLORIO. I also understand that you are associated with the Runway 27 Coalition, but there are other coalitions for other runways and that from time to time when there are improvements made on one runway, that the other coalition pays the price of those improvements?

Ms. THALER. We have tried in Boston, especially recently, not to play the game of musical neighborhoods. We are now coordinating with all other citizen communities in trying to get the airplanes not to send them from one to another every 2 years.

We are working very closely with all the coalitions. We speak at each other's meetings.

Mr. FLORIO. I think you pointed out very dramatically, though, that there are improvements which can be made by rerouting and changing descent patterns and things of that sort, and that the ultimate answer has to be quieter aircraft so that we are not trading off one community or one area for another.

We do appreciate the comments of all three witnesses. Your statements are in the record, and we do look forward to continuing cooperation with all of the local officials, governmental officials, and citizens' groups who have been in the forefront of this problem.

We thank you very much for your contribution.

Mayor Witt. Thank you very much, Mr. Chairman.

Mr. FLORIO. Our next witness is Mr. Jesse O. Borthwick, executive director of the National Association of Noise Control Officials.

We welcome you to the committee. We have received your statement in advance, and we have reviewed it in detail. It will be entered into the record in its entirety. We request you to proceed in summary fashion.

STATEMENT OF JESSE O. BORTHWICK, EXECUTIVE DIRECTOR, NATIONAL ASSOCIATION OF NOISE CONTROL OFFICIALS (NANCO)

Mr. BORTHWICK. I appreciate the invitation and opportunity to appear before you today to present the views of the National Association of Noise Control Officials (NANCO). As professionals dedicated to the prevention, control, and abatement of environmental noise, we are vitally concerned with the ever-increasing problem of airport noise and its impact on the public's health and welfare. I have organized our comments into three major areas: A brief overview of our organization; Federal versus State and local control; and a critique of the Aviation Safety and Noise Reduction Act.

NANCO is a nonprofit, scientific organization supporting environmental noise control. The association was incorporated in 1978 to establish and maintain a forum through which personnel of State and local agencies charged with administering laws regulating environmental noise and other interested parties may unite.

The association's most important aim is to provide a mechanism and opportunities for free exchange of information, discussion, and cooperative study of problems confronting its members. Other principal goals include promoting regulations, definitions, rulings, and enforcement of environmental noise control laws; encouraging and sponsoring adoption of the most effective and adequate methods for measurement, analysis and interpretation of environmental noise; encouraging adequate labeling of noise sources and control devices; and cooperating with others in the scientific community and with members of industry to promote the usefulness and effectiveness of noise control methods. While only a little over a year old, NANCO has grown rapidly, with over 200 members currently active throughout the United States.

It is important to note that our members represent themselves as individuals and do not represent the agencies by which they are employed.

While aircraft noise is recognized as a local noise problem, most State and local noise-control agencies have refrained from enacting noise-control legislation for airports because of Federal preemption and the belief that there would be a strong Federal noise-control effort in this area. According to a 1978 EPA survey of State and local noise control programs, 17 States and 188 communities rated aircraft noise as a significant problem; however, only 1 State and 40 communities reported having quantitative noise standards which apply to aircraft; and of those, no State and only 9 communities in the country are enforcing their noise standards. However, with the weakening of the Federal position, more and more States and cities are considering the adoption of airport noise-abatement regulations.

As a result of petitions filed by the Oregon Environmental Council and several citizen's groups, the Oregon Environmental Commission recently voted unanimously to initiate their rulemaking process for a State airport noise-control rule. If adopted, the rule as proposed would require airport proprietors to submit airport noise-abatement programs to the Commission for their approval. Each

abatement program would be required to include the following elements:

In my statement I have detailed some of the components that will be required for that program.

Minnesota is currently considering the development of a State noise permit program. Permits will be issued only to those airports which comply with the States existing noise pollution control regulations.

The Illinois Environmental Protection Agency is currently holding hearings on an airport noise-regulation proposal which has been submitted by the State's attorney general's office. The proposed regulation establishes maximum airport noise limits at receiving properties.

These are just a few examples of actions which have been initiated for the most part out of frustration for lack of progress at the Federal level. Unless the Federal airport noise-control effort can be made effective, States and local noise control agencies can be expected to become much more active in regulating airport noise. Control approaches currently considered federally preemptive will be increasingly challenged and a variety of airport noise regulations promulgated.

We strongly support the application of land-use planning techniques and other airport noise-control measures as identified in section 104[a][1], with the exception that soundproofing should be made available for private residences as proposed in the Senate version. However, we feel that such efforts should be administered by the State and local level.

Federal funding for such programs should be continued and expanded as outlined in the administration's proposed Airport and Airway Improvement Act of 1979, as submitted to the Speaker of the House of Representatives on April 24, 1979.

We feel that the issues addressed in titles I and II of the Aviation Safety and Noise Reduction Act are more appropriately and adequately addressed in the administration's proposed airport and airway legislation.

Section 106, which restricts the use in court of noise exposure maps and information concerning compatible land use runs completely counter to the public interest and should be deleted.

We feel that title III especially as proposed in the Senate version constitutes a major setback in the Federal effort to reduce aircraft noise emissions by delaying and waiving compliance with existing FAR 36 requirements, blocking the promulgation by FAA of more effective aircraft noise regulations, and essentially exempting two- and three-engine aircraft which account for 85 percent of today's operations from compliance with retrofitting requirements. Such action will serve to invalidate the noise predictions conducted to date through the master planning process, environmental impact assessments, and FAA-sponsored ANCLUC studies as most of these predictions are based on the assumption of total fleet compliance with FAA noise emission standards by 1985.

We feel that EPA, as opposed to FAA, should be assigned the leadership role in carrying out the provision of section 102.

After consultation with FAA and State and local noise control officials, and holding public hearings, the EPA should, first, estab-

lish a single metric to be uniformly applied in measuring airport noise emissions, and second, establish a single procedure for calculating and depicting the noise descriptor identified.

However, we do not feel that EPA, FAA, HUD, or any other Federal agency should identify through the regulatory process land uses which are normally compatible with various exposures of individuals to noise.

Also, as a result of technological advances, new health effects research and an apparent redirection in the Federal airport noise control effort, we strongly recommend that EPA, in consultation with FAA and State and local officials, should be directed to prepare and submit to Congress an up-to-date report on aircraft/airport noise.

We don't intend this to be used as a super report, but merely a report that should be made periodically to Congress on the state of the art.

This completes our comments. They are limited in scope because of the short period we had to prepare them.

Again, I thank you for the opportunity to testify. I will be happy to address any questions you might have.

[Mr. Borthwick's prepared statement follows:]

STATEMENT OF JESSE O. BORTHWICK, EXECUTIVE DIRECTOR, NATIONAL ASSOCIATION
OF NOISE CONTROL OFFICIALS (NANCO)

I. INTRODUCTION

Mr. Chairman and members of the subcommittee. I appreciate the invitation and opportunity to appear before you today to present the views of the National Association of Noise Control Officials, NANCO. As professionals dedicated to the prevention control and abatement of environmental noise, we are vitally concerned with the ever increasing problem of airport noise and its impact on the public's health and welfare. I have organized our comments into three major areas: a brief overview of our organization, Federal versus State and local control, and a critique of the Aviation Safety and Noise Reduction Act.

II. NANCO OVERVIEW

NANCO is a non-profit scientific organization supporting environmental noise control. The Association was incorporated in 1978 to establish and maintain a forum through which personnel of State and local agencies charged with administering laws regulating environmental noise, and other interested parties, may unite. The Association's most important aim is to provide a mechanism and opportunities for free exchange of information, discussion and cooperative study of problems confronting its members. Other principal goals include: promoting regulations, definitions, rulings, and enforcement of environmental noise control laws; encouraging and sponsoring adoption of the most effective and adequate methods for measurement, analysis, and interpretation of environmental noise; encouraging adequate labeling of noise sources and control devices; and cooperating with others in the scientific community and with members of industry to promote the usefulness and effectiveness of noise control methods. While only a little over a year old NANCO has grown rapidly with over 200 members currently active throughout the United States.

III. FEDERAL VERSUS STATE AND LOCAL CONTROL

While aircraft noise is recognized as a local noise problem, most State and local noise control agencies have refrained from enacting noise control legislation for airports because of Federal preemption and the belief that there would be a strong federal noise control effort in this area. According to a 1978 EPA survey of State and local noise control programs 17 States and 188 communities rated aircraft noise as a significant problem. However, only 1 State and 40 communities reported having quantitative noise standards which apply to aircraft, and of those no State and only 9 communities in the country are enforcing their noise standards. However, with the weakening of the federal position more and more States and cities are considering the adoption of airport noise abatement regulations.

OREGON

As a result of petitions filed by the Oregon Environmental Council and several citizen's groups, the Oregon Environmental Commission recently voted unanimously to initiate their rulemaking process for a State airport noise control rule. If adopted the rule as proposed would require airport proprietors to submit airport noise abatement programs to the Commission for their approval. Each abatement program would be required to include the following elements:

- (A) A map of the airport and its environs identifying projected noise impact boundaries at periods of five, ten, and twenty years into the future and all existing noise sensitive property.
- (B) An airport operational plan designed to reduce airport noise impacts including an evaluation of the effectiveness of the following noise abatement options:
 - 1. Takeoff and landing noise abatement procedures such as thrust reduction or maximum climb on takeoff;
 - 2. Preferential and priority runway use systems;
 - 3. Modifications in approach and departure flight tracks;
 - 4. Rotational runway use systems;
 - 5. Higher glide slope angles and glide slope intercept altitudes on approach;
 - 6. Displaced runway thresholds;
 - 7. Limitations on the operation of a particular type or class of aircraft, based upon aircraft noise emission characteristics;
 - 8. Limitations on operations at certain hours of the day;
 - 9. Limiting the number of operations per day or year;
 - 10. Establishment of landing fees based on aircraft noise emission characteristics or time of day;
 - 11. Rescheduling of operations by aircraft type or time of day;
 - 12. Shifting operations to neighboring airports;
 - 13. Location of engine run-up areas;
 - 14. Times when engine run-up for maintenance can be done;

15. Acquisition of noise suppressing equipment and construction of physical barriers for the purpose of reducing aircraft noise impact;
 16. Development of new runways or extended runways that would shift noise away from populated areas or reduce the noise impact within the Airport Noise Impact Boundary;
- (C) A land use and development control plan to protect the area within the airport Noise Impact Boundary from encroachment by non-compatible noise sensitive uses and to resolve conflicts with existing unprotected noise sensitive uses within the boundary. Appropriate actions under the plan may include:
1. Changes in land use through non-noise sensitive zoning,
 2. Influencing land use through the programming of public improvement projects,
 3. Purchase assurance programs,
 4. Voluntary relocation programs,
 5. Soundproofing programs,
 6. Purchase of land for airport related uses,
 7. Purchase of land for airport use,
 8. Purchase of land for non-noise sensitive public use,
 9. Purchase of land for compatible resale,
 10. Noise impact disclosure to purchaser.

MINNESOTA

The Minnesota Pollution Control Agency is currently considering the development of a State noise permit program. In order to receive permits under the program airport proprietors would be required to submit:

- (A) A comprehensive noise evaluation of the receiving land areas surrounding the facility.
- (B) Estimate of the sound levels at the receiving land areas.
- (C) Proposed methods for control of noise emissions including but not limited to:
 1. Operational procedures
 2. Designated runup areas

3. Preferential runways
4. Zoning
5. Curfews
6. Weight restrictions on aircraft using the facility
7. Noise emission limits on aircraft using the facility

Under the program as currently envisioned permits will be issued to only those airports which comply with the State's existing noise pollution control regulations which include the following standards for noise in residential areas:

	L50	L10
Day (0700-2200)	60	65
Night (2200-0700)	50	55

ILLINOIS

The Illinois Environmental Protection Agency is currently holding hearings on an airport noise regulation proposal which has been submitted by the State's Attorney General's Office. The proposed regulation establishes maximum airport noise limits at receiving properties. Residential properties would be protected by the following standards:

80 dBA LDN	As of the effective date
75 dBA LDN	As of 1981
65 dBA LDN	As of 1985

These are just a few examples of actions which have been initiated for the most part out of frustration for lack of progress at the federal level. Unless the federal airport noise control effort can be made effective, States and local noise control agencies can be expected to become much more active in regulating airport noise. Control approaches currently considered federally preemptive will be increasing challenged and a variety of airport noise regulations promulgated.

IV. CRITIQUE OF "AVIATION SAFETY AND NOISE REDUCTION ACT"

We strongly support the application of land use planning techniques and other airport noise control measures as identified in Section 104(a)(1), with the exception that soundproofing should be made available for private residences as proposed in the Senate version. However, we feel that such efforts should be administered at the State and local level. Federal funding for such programs should be continued and expanded as outlined in the Administration's proposed Airport and Airway Improvement Act of 1979, as submitted to the Speaker of the House of Representatives on April 24, 1979. We feel that the issues addressed in Title I and II of the "Aviation Safety and Noise Reduction Act" are more appropriately and adequately addressed in the Administration's proposed Airport and Airway Legislation.

Section 106, which restricts the use in court of noise exposure maps and information concerning compatible land use runs completely counter to the public interest and should be deleted.

We feel that Title III especially as proposed in the Senate version constitutes a major setback in the federal effort to reduce aircraft noise emissions by delaying and waiving compliance with existing FAR 36 requirements, blocking the promulgation by FAA of more effective aircraft noise regulations, and essentially exempting two and three engine aircraft which account for 85% of today's operations from compliance with retrofitting requirements. Such action will serve to invalidate the noise predictions conducted to date through the Master Planning Process, environmental impact assessments, and FAA sponsored ANCLUC studies as most of these predictions are based on the assumption of total fleet compliance with FAA noise emission standards by 1985.

We feel that EPA as opposed to FAA should be assigned the leadership role in carrying out the provisions of Section 102. After consultation with FAA and State and local noise control officials and holding public hearings, the EPA should:

- (1) establish a single metric to be uniformly applied in measuring airport noise emissions and
- (2) establish a single procedure for calculating and depicting the noise descriptor identified.

However, we do not feel that EPA, FAA, HUD or any other federal agency should identify, through the regulatory process, land uses which are normally compatible with various exposures of individuals to noise.

Also, as a result of technological advances, new health effects research and an apparent redirection in the federal airport noise control effort; we strongly recommend that EPA, in consultation with FAA and State and local officials, should be directed to prepare and submit to Congress an up to date report on aircraft-airport noise.

This completes our comments. Again, I thank you for the invitation and opportunity to testify and would be more than happy to attempt to address any questions you might have concerning NANO or State and local noise control.

Mr. FLORIO. Thank you very much. We do appreciate your help. This committee is sensitive to the points you raised. If, in fact, there is a retreat on the part of the Federal Government from its responsibility in dealing with this problem area, the State and the communities will move in to fill the void.

This committee having jurisdiction, as it does, over the implementation of the Noise Control Act on interstate sources of noise, is concerned about the potential disruption of interstate commerce. We have looked through your statement and, in particular, the in-depth analysis of what is going on in a couple of States.

We would like to assure you that we are aware of the potential problems that exist if the States feel the need, perhaps appropriately from some advantage point, of filling the gap left by the potential Federal deficiencies that may result from legislation which is before the House.

We thank you very much, and we look forward to working with you.

Mr. BORTHWICK. Thank you very much, Mr. Chairman.

Mr. FLORIO. Our final witness is the chairman of the Port Authority of New York and New Jersey. We are pleased to welcome Alan Sagner.

STATEMENT OF ALAN SAGNER, ON BEHALF OF THE PORT AUTHORITY OF NEW YORK AND NEW JERSEY, ACCOMPANIED BY MARK WIESNER, AVIATION STAFF; FRANCIS MULHERN, LEGAL STAFF; AND RICHARD ZINSER, AVIATION STAFF

Mr. SAGNER. May I ask that my staff people sit at the table with me?

Mr. FLORIO. Certainly. You may proceed.

Mr. SAGNER. Mark Wiesner, aviation staff; Francis Mulhern, of our legal staff; and Dick Zinser, of our aviation staff.

I want to thank you for the opportunity to appear today on the bill before this subcommittee. My message is simple and direct. The port authority is against passage of legislation that will extend the life of noisy aircraft.

I am presenting it to Congress on behalf of Governors Carey and Byrne as well as the noise-affected population surrounding our New York and New Jersey metropolitan airports. This same message was delivered by our director of aviation in April and our port district community leaders and elected officials in May. I might add that every public interest and environmental group that I can think of is on the same side of this issue. Still, pending legislation has made headway that undermines the hopes—and promise—of aircraft noise relief for from 6 to 10 million Americans. A substantial percentage of these citizens are our neighbors and, in the case of busy airports like ours, being an airport neighbor does not necessarily mean living across the street from the airport's gates. Noise footprints extend far and wide into the community.

Congress is moving in the direction of upsetting the careful plan of noise improvement developed by the Department of Transportation and the Federal Aviation Administration after painstaking analysis and long years of public debate. Implementation of this program would mean that the metropolitan area airports will be served by a quieter fleet of retrofitted, reengined or replacement

aircraft in accordance with the 1981, 1983, and 1985 schedules established by Federal regulation 2½ years ago.

H.R. 3942 represents a retreat from this plan of improvement. It waives compliance with Federal noise standards for 727's, 737's, DC-9's, and BAC 1-11's by allowing them to fly unmodified into major hubs as long as a predominant number of their operations are into medium, small, and nonhub airports; 60 percent is the figure. This we find very, very disturbing.

No one as yet has a firm fix on how many aircraft will be exempted and how many could continue to fly into Kennedy International, Newark International, and La Guardia. We don't know if there will be any reduction. We have not seen anything that will prove to us that there will be any reduction.

We have no assurance, Mr. Chairman, that this regulation can be enforced. I have the greatest confidence in the present administration but we are writing legislation that is going to be on the books for some time.

Mr. FLORIO. Thank you for your information. FAA, I am sure, has given us some reason to believe that they, through computers, are able to and they are in the process of trying to compute how many planes would be exempted and how many operations would be exempted. We hope to have that testimony next week.

We, of course, will make it available to you. I am sure that it will be very revealing in terms of the extensive exemptions that will be authorized under the law as currently being proposed.

Mr. SAGNER. I will be interested to see that. I am sure the pylons for the DC-10 were designed by computer, too. I have very little confidence in the ability to monitor, even with the admittedly advantageous capacity of modern computers, because the data that is fed into the computer is going to come from a number of people, people who will be serving their own interests.

I do think the information would be of interest. I think we can predict the pattern, that it is not going to be fixed; and especially under deregulation, as more and more airports are opened, there could be a constantly changing pattern of airports that would come under the exemption. We are very much concerned about that.

It is our belief—and we would like to see the data—that there will be a substantial number that could still come into the airports, especially LaGuardia, which is served almost exclusively by two- and three-engine aircraft, and in Newark, where they make up 68 percent of the aircraft use.

The people in the vicinity of those airports on the approach patterns will continue to be disturbed by this noisier element of the fleet. They are not going to be very happy knowing that that flight that is disturbing them originated at some small airport.

I am not here to speak on behalf of the people who live near small airports. While this alone, Mr. Chairman, is reason for opposition to H.R. 3942, this is not the main point I want to make today. I have a much graver concern I would like to present to you. That is, if H.R. 3942 is passed, it must be reconciled in conference with a Senate bill that all but nullifies FAR part 36. S. 413 gives a virtual green light to the continued operation of almost all two- and three-engine aircraft without any cutoff date whatsoever. Also under S. 413 a contract for replacement of a 707 or DC-8 signed by

January 1, 1985, becomes that aircraft's passport for continued operation of the airplanes in violation until delivery of the new aircraft without any specifics of how long that delivery would be. It is a big, wide opening. You don't have to be the best halfback to go through a hole like that.

These aircraft still constitute about 35 percent of all of the Kennedy movements. They are the aircraft that dominate the noise contours at Kennedy and to a lesser extent at Newark.

It is clear, then, what is in store should H.R. 3942 pass. A House bill that slows the trend toward quieter aircraft would have to be brought in line with a Senate bill that brings progress to a standstill. The likely result would be legislation that would allow quieter aircraft to come on line at a pace solely determined by airline economics and equipment needs.

The 1980's would be a repeat of the 1970's despite the promise we have held out to people who are concerned and who have looked for more radical solutions than they are willing to accept under FAR 36.

Speaking for Governor Carey and Governor Byrne as well as the Port Authority, I am here to say that we should, right now, look down the road at what could happen to noise abatement and not let it happen.

A great deal will be sacrificed if we don't look ahead. Our analysis indicates 50 percent fewer people in some noise-affected areas, NEF 30, at La Guardia Airport in 1983 if the program is unchanged. The same would hold true at Kennedy International by 1985, where additionally the people in the severe noise impact zone, NEF 40, would be reduced from more than 100,000 to about 30,000. Corresponding noise benefits will result at Newark International with its mix of four-engine and two- and three-engine aircraft.

I did have a special message for Mr. Murphy, although he is not here, to note that under FAR part 36 his Staten Island constituents, who are affected by Newark operations, would be entirely removed from the noise impact zone by 1985 if the present program remains unchanged.

La Guardia, which, as I mentioned, is served exclusively by two- and three-engine aircraft, provides another good example of the improvement that we expect. A good deal of debate has centered on the benefit of retrofitting JT-8D-powered aircraft, which account for about 80 percent of all air carrier movements in the country. Our studies indicate that people in the communities which surround La Guardia Airport will benefit materially in the form of less annoyance from overflying aircraft. The numbers are more than 200,000 in the South Bronx and uptown Manhattan, 30,000 in the East Bronx and City Island, 150,000 in Flushing and Bayside and approximately 15,000 in Jackson Heights and Woodside. These residents, including some 30 percent who fall into the category of "highly annoyed," should experience a significant reduction in their feelings of disturbance.

Our communities have joined with us in the fight for quiet and we don't want to see our hard-won gains taken away just when substantial noise relief is in sight at La Guardia, Kennedy, Newark and every other noise-impacted airport in the country.

We have finally reached the point where air carriers are getting down to the business of bringing their fleets into compliance. On top of the hundreds of orders and options for new aircraft over the last year or so, there have been breakthroughs on retrofit and reengining orders in the last few weeks. Delta has placed an order for retrofit kits for its 44 two-engine DC-9's, noting that its modification program may be completed by early 1982 or almost a year before the Federal requirement. United Airlines has announced a \$400 million order to reengine 30 DC-8's, stressing that the conversion will make this aircraft one of the quietest in the sky. Flying Tiger is exercising the same option in the airfreight field.

Tests that have been conducted here at Dulles prove conclusively that the retrofit program will have a significant impact, and Administrator Bond of the FAA has so testified.

These are the kinds of concrete noise reduction actions that will continue as long as present deadlines are there to provide impetus. I am concerned that without the force of regulations or weight of legislation, any sense of urgency will be removed from the noise picture.

I should like to point out to you, Mr. Chairman, that few, if any, utilities would have installed precipitators or scrubbers, very few of the manufacturers would have redesigned their cars for less polluting and more economical engines, very few sewer districts would find better ways to dispose of sludge if you, the Congress, had not mandated that they do so. The laws of economics, which should and do operate, would have a higher priority. It is the actions of Congress that have brought us improvements in these areas. This legislation is turning 180 degrees from the things that Congress has been doing to improve our environment in our communities in so many ways.

Only a few months ago I met personally with Secretary Adams and Administrator Bond to inform them that our communities were concerned not by necessarily the emasculation that we are concerned about today of FAR part 36 but what they were doing about letting the airline community know that they meant business.

We received at that time from the Secretary and the Administrator a pledge of strict enforcement and a commitment in response to our suggestion of a strict monitoring of compliance.

I might add that every indication that we have had from that time on is that they are intent on keeping their word, including broadening coverage to aircraft in international service.

Now we find that the Senate and, in this bill, the House is turning in a different direction. I repeat that the Port Authority of New York and New Jersey and the Governors of our two States and citizens are opposed to passage of H.R. 3942. We don't want this bill or any bill passed that has to be matched up with the version of the noise bill enacted by the Senate.

If this subcommittee in its deliberations decides that it will not kill this bill, then I would respectfully join the other witnesses today in urging that you strike out the noise waivers, title III, of this bill.

I want to thank you, Mr. Chairman and members of your staff, for the opportunity to be here this morning and present our views to you.

[Mr. Sagner's prepared statement follows:]

STATEMENT BY

Alan Sagner
The Port Authority of New York and New Jersey

before the
Transportation and Commerce Subcommittee
of the
Interstate and Foreign Commerce Committee

June 7, 1979

Thank you for the opportunity to appear today to testify on the bill before this Subcommittee. My message is simple and direct. The Port Authority is against passage of legislation that will extend the life of noisy aircraft.

I am presenting it to Congress on behalf of Governors Carey and Byrne, as well as the noise-affected population surrounding our New York and New Jersey metropolitan airports. This same message was delivered by our Director of Aviation in April and our Port District community leaders and elected officials in May. I might add that every public interest and environmental group that I can think of is on the same side of this issue. Still, pending legislation has made headway that undermines the hopes--and promise--of aircraft noise relief for from six to 10 million Americans. A substantial percentage of these citizens are our neighbors and, in the case of busy airports like ours, being an airport neighbor does not necessarily mean living across the street from the airports' gates. Noise footprints extend far and wide into the community.

Congress is moving in the direction of upsetting the careful plan of noise improvement developed by the Department of Transportation/Federal Aviation Administration after painstaking analysis and long years of public debate. Implementation of this program would mean that the metropolitan area airports will be served by a quieter fleet of retrofitted, re-engined or replacement aircraft in accordance with the 1981, 1983 and 1985 schedules established by federal regulation two-and-a-half years ago.

H.R. 3942 represents a retreat from this plan of improvement. It waives compliance with federal noise standards for 727's, 737's, DC-9's and BAC 1-11's by allowing them to fly unmodified into major hubs as long as a predominant number of their operations are into medium, small and non-hub airports. No one as yet has a firm fix on how many aircraft will be exempted and how many could continue to fly into Kennedy International, Newark International and LaGuardia. We believe the numbers and the impacts may be substantial, especially in the case of LaGuardia, which is served almost exclusively by these two and three engine types and at Newark where they make up 68 per cent of airline movements. The people on the ground who would continue to be disturbed by this noisier element of the fleet are not likely to be placated by the knowledge that these exempt-aircraft flights originated at or are destined to a small airport.

While this alone is reason for opposition to H.R. 3942, there is a graver threat. It is that H.R. 3942--if passed--must be reconciled in conference with a Senate bill that all but nullifies the DOT/FAA rule. S. 413 gives

a virtual green light to the continued operation of almost all two and three engine aircraft without any cutoff date whatever. Also under S. 413, a contract for replacement of a 707 or DC-8 signed by January 1, 1985 becomes that aircraft's passport for continued operations until delivery of a new aircraft some unspecified number of years later. They still constitute about 35 per cent of all Kennedy movements. They are the aircraft that dominate the noise contours at Kennedy and, to a lesser extent, at Newark.

It is clear, then, what is in store should H.R. 3942 pass. A House bill that slows the trend toward quieter aircraft would have to be brought in line with a Senate bill that brings progress to a standstill. The likely result would be legislation that would allow quieter aircraft to come on line at a pace solely determined by airline economics and equipment needs. The 1980's would be a repeat of the 1970's--or worse--for the people living around airports.

Speaking for Governor Carey and Governor Byrne, as well as the Port Authority, I am here to say that we should--right now--look down the road at what could happen to noise abatement and not let it happen.

A great deal will be sacrificed if we don't look ahead. Our analysis indicates 50 per cent fewer people in some noise affected areas (NEF 30) at LaGuardia Airport in 1983 if the program is unchanged. The same would hold true at Kennedy International by 1985, where additionally, the

people in the severe noise impact zone (NEF 40) would be reduced from more than 100,000 to about 30,000. Corresponding noise benefits will result at Newark International, with its mix of four engine and two and three engine aircraft. I think it should be of special interest for Mr. Murphy to know that his Staten Island constituents--who are affected by Newark operations--would be entirely removed from the noise impact (NEF 30) zone by 1985 if the present program remains unchanged.

LaGuardia, which as I mentioned, is served exclusively by two and three engine aircraft, provides another good example of the improvement that we expect. A good deal of debate has centered on the benefit of retrofitting JT-8D-powered aircraft, which account for about 80 per cent of all air carrier movements in the country. Our studies indicate that people in the communities which surround LaGuardia Airport will benefit materially in the form of less annoyance from overflying aircraft. The numbers are more than 200,000 in the South Bronx and uptown Manhattan, 30,000 in the East Bronx and City Island, 150,000 in Flushing and Bayside, and approximately 15,000 in Jackson Heights and Woodside. These residents, including some 30 per cent who fall into the category of "highly annoyed," should experience a significant reduction in their feelings of disturbance.

Our communities have joined with us in the fight for quiet and we don't want to see our hard-won gains taken away just when substantial noise relief is in sight at LaGuardia, Kennedy, Newark and every other noise impacted airport in the country.

We have finally reached the point where air carriers are getting down to the business of bringing their fleets into compliance. On top of the hundreds of orders and options for new aircraft over the last year or so, there have been breakthroughs on retrofit and re-engining orders in the last few weeks. Delta has placed an order for retrofit kits for its 44 twin-engine DC-9's, noting that its modification program may be completed by early 1982 or almost a year before the federal requirement. United Airlines has announced a \$400 million order to re-engine 30 DC-8's, stressing that the conversion will make this aircraft one of the quietest in the sky. Flying Tiger is exercising the same option in the air freight field.

These are the kind of concrete noise reduction actions that will continue as long as present deadlines are there to provide impetus. Without the force of regulation or the weight of legislation, any sense of urgency will be removed from the noise picture.

To trace back my recent involvement in the noise issue, it is only a few months ago that I met personally with Secretary Adams and Administrator Bond to inform them that our community allies were concerned by the lack of DOT/FAA initiative in moving toward implementation of the fleet noise rule. We received a pledge of strict enforcement and a commitment to monitor compliance of the airlines. I might add, that every indication that we have had from that time on is that they are intent on keeping their word, including broadening coverage to aircraft in international service.

Congress is moving in the direction of turning this victory--the fulfillment of a federal commitment to quieter skies--into defeat.

I repeat that the Port Authority is opposed to passage of H.R. 3942. We don't want this bill or any bill passed that has to be matched up with the version of the noise bill enacted by the Senate.

If this Subcommittee cannot avail itself of the option of killing this bill completely, I respectfully urge that you move to strike the noise waivers (Title III). Such an amendment offered by the Subcommittee would be a clear sign to colleagues that this is retrograde legislation and should be defeated when it comes to the floor. There are already on record the dissenting views of members of the Committee on Public Works and Transportation on this subject.

Thank you, Mr. Chairman and distinguished members of the Subcommittees for providing me with the opportunity to state clearly and emphatically where we stand on this important issue and to indicate where we think--without question--the public interest lies.

Mr. FLORIO. Thank you very much. Just in terms of a tactical observation, regardless of what the House does--and hopefully the House will do something that is responsible in this area--we will have a conference committee that will have, as one of the pieces of legislation on the table, a Senate bill. Unfortunately we are going to be involved, in the conference committee, with at least one piece of legislation that some feel does not go in the right direction.

In the event that the legislation that is presently being considered by the House Public Works Committee and the Senate is passed, can you anticipate what the response would be from either the port authority or the two constituent States that it represents? What anticipated action would be forthcoming in light of the awareness and concern about noise problems from the airport that you are supervising and what would be clearly perceived as a Federal retreat from its responsibility? Can you anticipate what the State legislatures or the port authority might be inclined to do?

Mr. SAGNER. I hesitate to predict what State legislatures are going to do. I know that there has been tremendous pressure, demonstrations, acts of violence around airports because of noise. I think we have seen in the last year or so a modification of public reaction because the public has accepted the argument that we and other airport operators have advanced, that drastic action is counterproductive to the benefit and the economic welfare of the whole area, that we have to put up with some discomfort because too

drastic action would have such an adverse economic effect on the airports that it would not be the wise thing to do.

What has helped reach this understanding is the promise of quieter skies in FAR-36. I hesitate to predict what would happen if the people see that that promise is not going to be kept and that the promise is being broken by action of the legislature. I can predict there will be pressure from the legislatures of two States, pressure from the port authority, pressure from operators in Philadelphia and other areas to take drastic actions which would have an adverse effect on the development of those regions.

Mr. FLORIO. With regard to the acknowledged fact that quieter airplanes are the real approach or the real answer, what, if anything, is the port authority going as an interim step to abate noise through other procedures short of quieter airplanes? Are you doing any noise abatement?

Mr. SAGNER. We have had for some time noise abatement procedures which are constantly being monitored by us in cooperation with FAA. One of my staff can explain it better than I. We have this again on the computer. We select the runways based on weather conditions—wind and other factors—to direct the aircraft for considerations of safety to those runways that will have the least impact on the community. It is the best that we can do. It is as effective as we can be. As you said, Mr. Chairman, the answer lies in the aircraft that are flying, and there is very little that we can do.

Mr. FLORIO. Do you have noise abatement plans for each of the airports?

Mr. SAGNER. Yes, we do.

Mr. FLORIO. What is your opinion as to whether or not airport development funds should be made available contingent upon the adoption of airport noise abatement plans? As you know, many airports do not have such plans. Many airports have not seen fit to become involved in this planning process.

I heard you make reference to governmental activities, in particular, saying that the voluntary approach has not been very successful. I am inclined to think that statement is correct. If, in fact, we are going to require plans, suggestions are made that the best way to insure that those plans will be formulated and filed is to make airport development funds contingent upon adoption of such plans.

Mr. SAGNER. We have no argument; we would accept the proposal as outlined in this bill to try it out on a voluntary basis in cooperation with the FAA to see what could be accomplished. We have no problem with that.

Mr. FLORIO. We certainly appreciate your willingness to come on a relatively short notice and talk with us as representatives of one of the major airports in the country. We look forward to having the staff work in conjunction with the port authority staff so that we can formulate some responses. Thank you for your help.

Mr. SAGNER. Thank you, Mr. Chairman.

Mr. FLORIO. The subcommittee stands adjourned.

[Whereupon, at 12 noon the subcommittee adjourned, to reconvene at 9:30 a.m. Tuesday, June 12, 1979.]

AVIATION SAFETY AND NOISE REDUCTION ACT OF 1979

JUNE 12, 1979

HOUSE OF REPRESENTATIVES,
SUBCOMMITTEE ON TRANSPORTATION AND COMMERCE,
COMMITTEE ON INTERSTATE AND FOREIGN COMMERCE,
Washington, D.C.

The subcommittee met at 9:30 a.m., pursuant to notice, in room 2322, Rayburn House Office Building, Hon. James J. Florio, chairman, presiding.

Mr. FLORIO. The subcommittee will come to order.

Ladies and gentlemen, we are to commence the second day of hearings on H.R. 3942. Before beginning, I would like to note what I regard as a very serious matter which has arisen regarding the refusal of some witnesses to testify before this subcommittee.

Almost 2 weeks ago the subcommittee sent invitations to four major aircraft engine and frame manufacturers asking them to testify at these hearings. The companies include McDonnell-Douglas and Boeing, who manufacture aircraft frames, and General Electric and Pratt Whitney who make the engines. All four corporations have refused to appear.

The lack of cooperation on the part of the aircraft manufacturers is a serious impediment to this subcommittee's deliberations.

The legislation before us will significantly affect the Federal aircraft noise regulatory program. It is imperative to have the testimony of engine and frame manufacturers regarding both present design technology and the availability of quieter aircraft. The subcommittee would also like to question the manufacturers regarding the effects of noise regulations on engine fuel efficiency, inasmuch as we have contradictory testimony before the committee already on that point.

The refusal of the manufacturers to appear and testify on these matters makes it nearly impossible for the subcommittee to fully investigate the need for changes in the present law.

I have, therefore, called a meeting of this subcommittee for Wednesday, June 13, for the purpose of considering the issuance of subpoenas to these witnesses. I also intend to ask the Speaker for an extension of our June 22 deadline in order to allow the subcommittee adequate time in which to deal with this matter and to also complete its record for the purpose of having a full record for the subcommittee's deliberations.

I think it is important to note that there have been differing views with regard to the question of fuel efficiency and with regard

to whether or not quieter aircraft can be made available if, in fact, the demand is there.

We will, therefore, proceed with today's hearings and then take into account what the next course of action should be as a result of the 13th of June meeting.

We are very pleased to welcome as our first witness, Mr. Angello Cifelli, Freeholder, Essex County, who was recently elected, and who has a situation in his area that is certainly deserving of the public's notice in terms of the whole question of airport noise and its impact upon economic development. In this case, we are referring to the city of Newark.

Mr. Freeholder, we welcome you.

STATEMENT OF ANGELLO CIFELLI, JR., FREEHOLDER, ESSEX COUNTY, N.J.

Mr. Cifelli. Thank you. Let me thank the members of this subcommittee and especially the chairman for this opportunity to address you on this important issue to my area.

Let me apologize in advance for the nervousness that I am sure will come through the entire presentation.

I am Angello Cifelli, Jr. I was elected in November as the Essex County Freeholder from District 1. District 1 is composed of the entire east and north wards and a significant portion of the west ward of the city of Newark. I myself reside in the east ward of Newark in an area called Ironbound.

This particular area is that which is most affected; that is why I am here. The Ironbound area of the city of Newark has been recently written up in national magazines and newspapers on account of the fact it is being held up as a model urban neighborhood. This working-class community has established itself as the focal point of the renaissance that the city of Newark is now undergoing. It's very rich and varied cultures of the many ethnic groups all in all make a very successful community. My interest in addressing you, therefore, is not only as representative of this community but also as a lifelong resident who is affected significantly by noise pollution.

Significant areas of the Ironbound section of Newark are so situated as to be in the flight path of landing aircraft at Newark. It is runway 22-L. This particular runway handles 41 percent of all landings at the Newark International Airport. It also takes in a significant amount of that 41 percent during the summer months when wind conditions favor the use of this runway.

We are also affected by landings at 22-R which handles an additional 8 percent of the landings at the airport.

As I mentioned before, most of these landings are in the summertime. That is when the runways are most used and that is the time when, in my neighborhood in particular, people are outside, congregating in front of their homes and have their windows open.

So what we are dealing with here is a situation where for hard-working people in my area there is no such thing as a quiet evening spent at home. The noise levels are deafening when the aircraft land. The problems go beyond mere structural damage to the houses and disruption of lifestyle to the fact that we are really

experiencing health problems by the constant assault of noise on the nervous system of the people who live there.

We have had numerous community meetings on this problem. Many of them have resulted in confrontations between the people of the community and the port authority which runs the airport. Hope has always been held out, engendered by the fleet noise rule, which according to their statistics will significantly reduce the level of decibels of the landing aircraft, in fact, will cut it in half, by 1983.

Now we are faced—and we are told that the bills—I think one has already passed the Senate and this particular one pending in the House—will seriously hamper the fleet noise rule by providing loopholes through which the aircraft people can circumvent its intent.

Recent meetings in the community have been marked by a growing movement of people who say that if something is not done they are going to leave, as the only way of getting away from this noise pollution.

I am here to tell you today if people start leaving the Ironbound area, the repercussions will be felt beyond Newark and even Trenton, our State capital, right here in Washington.

The city of Newark is undergoing significant problems that all urban areas face: a shrinking tax base and rising crime.

Now, the east ward of Newark, of which Ironbound is an area, constitutes a situation in which we are paying 47 percent of the taxes that the city of Newark is collecting currently. Besides that, we are providing the needed stability, neighborhood-wise, that is insuring the city's rebirth.

Now, if the people start leaving the Ironbound section, the businesses—and we are made up of small businesses—will have to follow their exodus. That will be a hammerblow to the tax base that is already under constant erosion.

I think if you see an exodus here, you will see more and more dependence on Federal funds to go to the city of Newark to make up for the taxes we are losing.

We are hearing a lot of lip service about the fact that this Nation has a commitment to its urban centers. I think this bill presents an opportunity for Congress to go beyond mere lip service and demonstrate that commitment by extending a helping hand to a community that is struggling to stay alive.

Thank you very much.

[Mr. Cifelli's prepared statement follows:]

STATEMENT OF ANGELO CIFELLI, JR., FREEHOLDER, ESSEX COUNTY, NEW JERSEY

ESSEX COUNTY FREEHOLDER DISTRICT ONE IS COMPRISED OF THE ENTIRE EAST AND NORTH WARDS OF THE CITY OF NEWARK AS WELL AS A PORTION OF NEWARK'S WEST WARD. I, MYSELF, RESIDE WITH MY FAMILY IN THE IRONBOUND SECTION OF THE EAST WARD. THIS SECTION HAS BEEN WRITTEN UP IN NUMEROUS MAGAZINES AND NEWSPAPERS AS A MODEL URBAN NEIGHBORHOOD. RICH IN THE VARIED CULTURES OF THE MANY ETHNIC GROUPS WHICH MAKE UP ITS POPULATION, THE IRONBOUND HAS SET A STRIKING EXAMPLE OF THE RENAISSANCE A COMMUNITY CAN ACHIEVE WHEN PEOPLE ARE PROUD OF THEIR NEIGHBORHOOD AND WORK TO MAKE IT A DECENT PLACE TO LIVE. MY INTEREST IN ADDRESSING YOU TODAY IS NOT ONLY THAT OF A REPRESENTATIVE OF A PROUD COMMUNITY BUT AS A LIFE-LONG RESIDENT OF THAT COMMUNITY WHO SHARES THE PROBLEM OF NOISE POLLUTION.

SIGNIFICANT AREAS OF THE IRONBOUND SECTION OF NEWARK ARE SO SITUATED AS TO BE IN THE FLIGHT PATH OF AIRCRAFT LANDING AT NEWARK INTERNATIONAL AIRPORT'S RUNWAY 22-L. THIS RUNWAY HANDLES 41 PERCENT OF THE TOTAL AIRLINE LANDINGS AT NEWARK INTERNATIONAL. THE TRAFFIC CONSTITUTING THIS PERCENTAGE INCREASES SUBSTANTIALLY DURING THE SUMMER MONTHS WHEN WIND CONDITIONS FAVOR USE OF THIS RUNWAY. THE COMMUNITY IS ALSO AFFECTED BY LANDINGS ON RUNWAY 22-R WHICH CONSTITUTES AN ADDITIONAL 8.7 PERCENT OF THE LANDINGS AT THE AIRPORT.

AS MENTIONED EARLIER, NOISE FROM AIRCRAFT LANDING ON THE RUNWAYS IN QUESTION IS ESPECIALLY HEAVY DURING THE SUMMER

MONTHS; A TIME MOST RESIDENTS SPEND TIME OUTSIDE THEIR HOMES OR LEAVE THEIR WINDOWS OPEN.

THUS, FOR THE HARDWORKING PEOPLE OF MY DISTRICT THERE IS NO SUCH THING AS "SPENDING A QUIET EVENING AT HOME." BEYOND THE STRUCTURAL DAMAGE DONE TO HOMES, AND THE DISRUPTION OF LIFESTYLES CAUSED BY THE ALMOST CONSTANT NOISE POLLUTION, THERE ARISES THE QUESTION OF THE RESIDENTS' HEALTH BEING UNDERMINED BY THE CONSTANT ASSAULT OF NOISE UPON THE NERVOUS SYSTEM.

THE PROBLEM OF AIRCRAFT NOISE HAS BEEN THE SUBJECT OF NUMEROUS COMMUNITY MEETINGS WHEREIN SOLUTIONS TO THE PROBLEM HAVE BEEN SOUGHT. HOPE HAS BEEN ENGENDERED BY THE FLEET NOISE RULE WHICH, ACCORDING TO AIRPORT STATISTICS, WILL RESULT IN HALVING THE CURRENT DECIBEL COUNT OF LANDING AIRCRAFT. NOW WE LEARN OF A BILL IN BOTH HOUSES OF CONGRESS WHICH WILL EITHER NULLIFY THE FLEET NOISE RULE OR PROVIDE LOOPHOLES THROUGH WHICH THE AIRLINES CAN CIRCUMVENT ITS INTENT. THE PASSAGE OF SUCH LEGISLATION WILL SERVE TO EXTINGUISH THE HOPE THAT SUSTAINED MANY RESIDENTS OF THE AREA. RECENT MEETINGS OF THE COMMUNITY HAVE BEEN MARKED BY A GROWING MOVEMENT TO LEAVE THE AFFECTED AREA AS THE ONLY MEANS OF ESCAPING THE NOISE. I AM HERE TODAY TO TELL YOU THAT IF SUCH A MOVEMENT TAKES PLACE; IF PEOPLE START TO LEAVE THE IRONBOUND THERE WILL BE REPERCUSSIONS THAT WILL BE FELT BEYOND NEWARK OR EVEN TRENTON, BUT IN WASHINGTON ITSELF. I DON'T HAVE TO TELL ANYONE

HERE THAT THE CITY OF NEWARK FACES SEVERE PROBLEMS THAT AFFECT MOST OF OUR URBAN CENTERS; INCLUDING A SHRINKING TAX BASE AND RISING CRIME. THE EAST WARD OF NEWARK CURRENT PAYS 47 PERCENT OF THE TAXES DUE THE CITY, AND SUPPLIES A NEEDED STABILITY WHICH HAS SERVED TO SUCCOR NEWARK IN ITS CURRENT ATTEMPT AT REVIVAL. ANY EXODUS OF A PEOPLE FROM THE IRONBOUND WILL BRING WITH IT A DEMISE OF THE SMALL BUSINESSES THAT SERVE THOSE PEOPLE RESULTING IN A HAMMER BLOW TO A CITY ALREADY STRUGGLING TO STAY ALIVE. IT SEEMS TO ME THAT A GREAT AMOUNT OF LIP SERVICE IS PAID TO AMERICA'S COMMITMENT TO ITS URBAN CENTERS. IT IS TIME FOR CONGRESS TO GO BEYOND MERE LIP SERVICE AND DEMONSTRATE THAT COMMITMENT BY SUPPORTING A PROUD COMMUNITY IN ITS STRUGGLE TO REMAIN A DECENT PLACE TO LIVE.

Mr. FLORIO. We thank you.

I can note for the record, having been in the Ironbound section, that you are talking about a stabilized community in an otherwise unstable municipality on occasion, and therefore your point, I think, is very, very appropriate to make here.

On one hand, you have an announced Federal policy of revitalizing and redeveloping urban areas such as the city of Newark. This announced urban incentive from the administration which is appropriating all sorts of funding to provide for that stabilization and redevelopment, is coexisting with the Congress consideration of an airport noise policy which will work in a way that will undermine the ability to stabilize and to redevelop an area such as the city of Newark.

I think that is a very valid point to make.

The only other point I think I would emphasize is the question of cost. The argument on behalf of this legislation that has been made in the past, and perhaps will be made again, is that the cost of quieter airplanes is something which is beyond the capability of some people to make.

I think Congress, as the body representing the people, has to evaluate conflicting costs. The cost in terms of lost profit values is a cost that has to be rolled into the computations as well, and there are those—myself included—who feel that those costs outweigh the costs that would come from requirements for quieter airplanes and, therefore, in the overall policy, watering down of existing noise laws is not an appropriate way to go.

I would just like to express my appreciation for your taking the time to come before the committee and providing us with your insight from a different perspective, which is a very helpful thing.

Mr. CIFELLI. I was told specifically, Mr. Sagner of the port authority testified last time and said he represented both the people

of New York and Newark. I am here representing the little people on Gottart, Darcy and Napoleon Streets.

Mr. FLORIO. Mr. Madigan?

Mr. MADIGAN. Is a freeholder a member of the city council?

Mr. CIFELLI. No. We are the county legislative body for the entire county, Essex County.

Mr. MADIGAN. Like a county board of supervisors?

Mr. CIFELLI. Yes, that is the closest thing to it.

Mr. MADIGAN. What altitude are these airplanes operating, which are of particular concern?

Mr. CIFELLI. The landing pattern on 22-L brings it to a point where you can read the numbers right on the plane over your house, it is that close. I would not know the exact figure, but you are talking very close to the ground level as they come in.

Mr. MADIGAN. So, the airport is very close to your constituents—

Mr. CIFELLI. Right.

Mr. MADIGAN. To the homes and businesses that you are talking about?

Mr. CIFELLI. Right. You can clearly read the letters on the aircraft; no problem.

Mr. MADIGAN. Has any thought been given to moving the airport? Yours is an old neighborhood; it must be an airport that was established sometime ago?

Mr. CIFELLI. There are several ways we are trying to get the runways moved for the airport and try to rearrange the flight patterns. The port authority is working with us in that area.

We are also considering some kind of legal action if that does not work out.

Mr. MADIGAN. What kind of aircraft are using this airport?

Mr. CIFELLI. Currently, all kinds. The ones we are most concerned about are the two- and three-engine jets.

Mr. MADIGAN. Are four-engine jets also operating?

Mr. CIFELLI. Yes, sir; but usually they are international flights coming into Newark, and they usually use another runway; they are not the ones that we are concerned about. It is the two- and three-engine jobs that use the particular runway.

Mr. MADIGAN. What would happen if the other airplanes used the other runways?

Mr. CIFELLI. I would imagine the noise would be even worse, if the four-engine planes started using that particular approach.

Mr. MADIGAN. What if the two- and three-engine airplanes used the runways that you say the four-engine airplanes use?

Mr. CIFELLI. That is a problem I don't know very much about. I know the runway in question is already handling 41 percent of the landings. I don't know; they could change it. I don't know what the runway situation is.

Mr. MADIGAN. Usually, a runway is assigned because of the relationship to the weather conditions; isn't that correct?

Mr. CIFELLI. Yes; that is why this particular runway is used mostly in the summer when the wind blows from the south; it makes its approach much more desirable.

Mr. MADIGAN. What I don't understand is that there must be another runway—and I am not trying to badger you; I am just

trying to understand it—there must be another runway that is equally sufficient as far as weather conditions are concerned, if the four-engine jets are able to use it?

Mr. CIFELLI. I am not aware of one. It may very well be. I don't know, Mr. Madigan.

Mr. MADIGAN. You said they use some other runway?

Mr. CIFELLI. They do use runway named 22-R; that handles 8 percent of the landings. That, again, is in our flight pattern; that, too, is used by two- and three-engines. I don't know if that is used by the four-engines as well.

Mr. MADIGAN. Twenty-two is 220 degrees; isn't that what it means?

Mr. CIFELLI. I am sure it is.

Mr. MADIGAN. You are saying that 22 left or right is used by two- and three-engine jets, but the four-engine jets are using something else?

Mr. CIFELLI. To my knowledge.

Mr. MADIGAN. Do you know what it is?

Mr. CIFELLI. No, that I don't know.

Mr. MADIGAN. I don't have any other questions.

Mr. FLORIO. Thank you very much.

The next two witnesses are part of a panel: General Clifton F. von Kann, vice president—operations and airports, Air Transport Association—ATA; and Mr. Robert E. Ginther, president of the Association of Local Transport Airlines.

We welcome you to the committee. We ask you to identify your colleagues for the record.

STATEMENTS OF CLIFTON F. VON KANN, SENIOR VICE PRESIDENT OF OPERATIONS AND AIRPORTS, AIR TRANSPORT ASSOCIATION OF AMERICA, ACCOMPANIED BY J. ROGER FLEMING, DIRECTOR, ENVIRONMENTAL AFFAIRS; AND ROBERT E. GINTHER, PRESIDENT, ASSOCIATION OF LOCAL TRANSPORT AIRLINES

Mr. VON KANN. I am Clifton von Kann, senior vice president for operations and airports of the Air Transport Association.

I think Mr. Ginther, who is president of the association of Local Transport Airlines, has been identified.

On my right is Mr. J. Roger Fleming, who is the director of environmental affairs in the Air Transport Association.

I will start out, if I may, Mr. Chairman.

Mr. FLORIO. We have read your statements. They will be entered into the record in their entirety. You may proceed as you see fit.

Mr. VON KANN. Thank you, sir. I would appreciate that, since the statement is long and in some areas technical.

I should mention at this point, sir, that my statement applies to all members of the Air Transport Association except Delta Air Lines, which does not entirely share the views expressed in my testimony and is submitting its own views for the committee record. We will have my statement amended to show that.

Mr. FLORIO. Incidentally, for the record, we have invited Delta to come before this committee. As of this point, we have not had an acceptance presented to the committee. We are going to pursue our efforts to have Delta come before the committee; Delta, of course,

being apparently one of the airlines which is complying with the standards.

We think it is important for the subcommittee's deliberations to have the benefit of the thoughts of an airline that is already in compliance, and that intends to comply with the law.

Mr. VON KANN. We certainly agree that is appropriate, Mr. Chairman.

Mr. FLORIO. Thank you.

Mr. VON KANN. By way of comment on my statement, I think it might be useful if I backed off a bit, sir, and gave a little of the historical perspective of how we got where we are now.

As you know, there are three basic ways to reduce noise: through land use, through modification of flight paths, and by reducing noise at the source.

While over the years much has been said about land use, it is very difficult to do very much about it.

A great deal has been done on flight paths. There are some opportunities to work further in that area, but they have been largely exhausted. So most of the attention during the past several years has been focused on source noise reduction.

I guess you could say a public debate on that subject has been in progress for the better part of the last decade. In the course of the public debate, three conclusions have been seen to stand out: one is that retrofitting existing aircraft is the least effective measure for reducing noise. A second conclusion is that new aircraft, or at least current aircraft reengined with new technology engines, provide a much more effective approach.

Why is this so? Well, fundamentally because the drawing board is the best place to reduce noise. Even more importantly, new aircraft, or reengined aircraft, will use high bypass ratio engines rather than the low bypass ratio engines on most of the current aircraft, that is, up to the wide bodies. That is very important, Mr. Chairman, because the old-fashioned, low bypass ratio engines such as you have on the 707's, the 727's, the DC-9's, emit what is called a pure-tone type of noise, where you get this high frequency spike. It is the scream that momentarily occurs when they pass overhead; it is terribly annoying; thus, pure-tone noise is the principal source of the annoyance.

With the high bypass ratio, engines such as you find on the wide bodies, I am sure you are aware the noise sound is different; it is in a different octave; it is what you call a broad-band type of noise; it is more of a rumble and appears to be much less annoying to the people in the vicinity.

So this transition to what is called new technology aircraft and new technology engines is very important in terms of annoyance to airport neighbors.

There are other advantages to the newer engines. They are much more fuel economical, something like 20 to 30 percent, which is becoming a very important consideration. There are also national advantages. The more new production, the more you have in the way of jobs, and the more the country does to maintain its technological leadership.

Now the third conclusion which came out of the public debate of the 1970's was that any source noise reduction should be accompa-

nied by a financing program, as the industry could not afford such a program from its own resources. This was substantiated by a public hearing in December 1976, which was personally conducted by then Secretary of Transportation William Coleman.

In that hearing witnesses from all over the country and from all areas—airport operators, consumer organizations, airport neighbors, the financial community, manufacturers and, of course, operators themselves, and the interested Government witnesses—participated. There were something like 30 witnesses. All but one, as I recall, concluded that a financing program should accompany the source noise reduction program.

Mr. FLORIO. Do you feel those conclusions are relevant in light of the changes in the industry since that time?

Mr. VON KANN. I do, and I will cover that as I proceed, Mr. Chairman.

Now, rather than having a joint program, one with source noise reduction and a financing mechanism, the two were split apart, in that the FAA published subpart E to FAR part 91 at the tailend of 1976 and legislation was presented to the Congress to take care of the financing part of it. In other words, the two considerations, the two aspects of the program, were split at that time.

As I am sure this committee knows, financing proposals were passed by different bills in the two houses of the Congress last year; but in the final hectic days the two could not be reconciled. So the matter has now died, at least for the moment.

As a result now, the airlines are stuck with having to engage in a source noise reduction program without any financing mechanism. This means they must use the least cost program, which is a retrofit program.

So we are back to a retrofit program which, as we have said, is probably the least beneficial in terms of meaningful noise reduction.

Now if I might take a minute to talk a bit about the benefits versus the cost of that program, then I will come to the answer to your question.

The benefits have been debated long and loud. We have talked about single noise events and whether or not there is a meaningful relief here. We have had numerous flyovers. There was one last year at Dulles; there was another one in 1976 at Dulles, and we are getting noise monitoring information which is being reported at Washington National and at Dulles by FAA.

The main points that strike me here are that it has not been established that small reductions in decibels per se, certainly reductions of less than 5, have any meaningful consequence.

In our 1976 test, for example, there was something like a 50-percent crossover in the actual decibels, noises transmitted by the treated versus untreated planes of the same type.

In the test last year it is true that 70 percent of the witnesses identified the treated versus the untreated planes. On the other hand, this also means that 30 percent of the witnesses either failed to identify the difference or misidentified; and even though I would say I was not a novice in this business, I made the mistake one time, myself.

I don't think anyone who heard this test would have said that the difference was a meaningful difference, even if it could be identified, because you are still listening to one type of pure tone and another one a few decibels quieter. So whether or not it could be identified in the real world, and whether or not it would be meaningful, is highly doubtful.

The scientific evidence which I have cited at some length in my statement indicates that anything under 5 decibels does not produce meaningful noise reduction.

Further, the noise monitoring reports of FAA at Dulles and at Washington National again show no significant difference in the decibels emitted by the treated versus the untreated aircraft.

So I simply contend that on the evidence we have, there is no indication in the single noise event, changes of under 5 decibels have any meaningful effect.

Now the case has also been argued in terms of cumulative noise reduction, in other words, you take all the total energy that is produced by a series of flights and compare that with a total amount of energy produced by another series of flights in which your engines have been treated. You postulate a certain amount of noise reduction and then by various calculations you conclude that there is a meaningful noise reduction here.

Now this hinges on similar formulas. There are different names they use. The NEF noise exposure forecast is a popular one. FAA is now developing another one. It is using a combination. It provides a way you can translate from one formula to another.

Now all of these have yet to be proven to have any meaningful correlation with the actual annoyance experienced on the ground.

The most authoritative study on this subject was done by NASA, the so-called Tracor study. It showed a low correlation between the noise forecast on the basis of the NEF formula and the actual annoyance on the ground.

So, I think it is fair to say that this approach is yet to be substantiated.

Right now, FAA is working to improve the noise metrics in its noise measurement work.

Perhaps the best way to point out the weakness in this energy input approach is the fact that if you translate the formula into what it says, you find that it tells you that 10 planes which emit 100 decibels produce the same community noise as 100 planes producing 90 decibels.

In other words, it comes out in ridiculous form. This is all developed in my statement. I am sure your staff will be studying it more carefully.

Anyway, Mr. Chairman, my point is that the benefits, the alleged benefits, to be derived from a retrofit program are negligible, if they exist at all, and in some ways there are disbenefits in terms of the extra weight that the planes have to carry, plus the extra fuel. We have estimated the increased use of fuel will approximate a million gallons a month. We estimated some increases in maintenance costs. So, we don't see any benefits and we see some negative benefits.

Now let us turn to the question of financing and the ability of the airlines to finance this program. It is quite true that when we

started on the idea that this should be a joint financing program wrapped around the source noise reduction program, it was recognized that the industry was having difficult times economically. Since then there has been a considerable improvement and it has been pointed out, I am sure, to this committee and certainly to other committees, that in 1978 the airlines experienced record profits. This is beyond argument.

However, what most witnesses have not done is to look at the current trend. 1978 was a record profit year, but in the last quarter of 1978 there was a deterioration in industry profit of \$50 million from the last quarter of the previous year. The first quarter of 1979 showed a profit erosion of \$75 million. In other words, in the last 6 months for which we have a count, profits eroded by \$125 million.

This trend will probably continue during the year. As a matter of fact these trends do not even take into account what is happening right now in the way of fuel prices. As you know, the fuel situation has gotten very bad recently. As a rule of thumb, you can assume that every rise of 1 cent in the price of fuel increases the overall industry cost by \$100 million. I think you are all aware of what has been going on recently. Airlines have had their allocations cut and are having to go out on the spot market. I visited one airline's headquarters on the West Coast last week where they were having to pay up to \$1.20 a gallon on the spot market versus the 40 cents in their contract.

Now what this will do by the end of the year is hard to say, but I think anyone who says that airlines are now earning record profits will have some correcting to do when the year end results are in.

In other words, we are not dealing with an industry now that is experiencing record profits. We are dealing with an industry that is fighting to retain its profitability. In this connection, too, the impact of the smaller carriers, the ability of the smaller carriers to finance a program of this kind is even more questionable. The burden on those carriers is disproportionate. I think Mr. Ginther will be developing that, so I will leave that part of it to his presentation.

Then, Mr. Chairman, to summarize, we see a program here which is of very little benefit. The ability of the industry to finance this kind of program is open to a good deal of doubt. In the meantime I think I should point out that progress is being made in the hardware side of the picture. I have some notes here. I think it would be good to point out that while 5 years ago only 16 percent of the aircraft in the scheduled airline fleets met FAR 36 stage 2 noise standards, we now estimate by the time new aircraft on order have been delivered to our carriers 55 percent will meet or better these standards.

This 55 percent will include 150 or more of the FAR 36 stage 3 aircraft which are the newest technology aircraft and the quietest. We think that if the industry has to spend \$200 million for an ineffective retrofit program it will simply delay this movement into the newer and better aircraft. For this reason we support any relief that can be achieved by legislation. Whether or not the current version of the bill is the best way to achieve it we certainly support the general thrust of the bill as developed in title III.

With that I will conclude my statement. Would you like Mr. Ginther to go ahead.

[Testimony resumes on p. 162.]

[Mr. von Kann's prepared statement follows:]

Statement by Clifton F. von Kann
 Senior Vice President - Operations and Airports
 Air Transport Association of America before the
 Subcommittee on Transportation and Commerce
 of the House Interstate and Foreign Commerce
 Committee on Proposed Noise Legislation,
 June 12, 1979

MR. CHAIRMAN

My name is Clifton F. von Kann: I am Senior Vice President - Operations and Airports of the Air Transport Association of America (ATA) which represents virtually all of the U. S. scheduled airlines.* We appreciate the opportunity to comment on H.R. 3942, reported by the Public Works and Transportation Committee on May 15, 1979.

GENERAL COMMENTS

H.R. 3942 seeks to reduce the impact of noise and to make the skies and airports increasingly safe. The airlines share these goals with you. Their deep commitment to safety is recognized; and for many years they have devoted extensive time and resources to noise abatement.

Airline efforts to reduce noise predate the introduction of jet transport aircraft into commercial airline service. The specifics have been detailed in previous testimony before the Public Works and Transportation Committee in both the 95th Congress and again before the Aviation Subcommittee on May 1, 1979. I will not repeat previous testimony here.

*"Delta Air Lines does not entirely share the views expressed in the following testimony and has submitted its own views for the Committee record."

Before turning to specific issues raised by TITLE III of these bills, I would like to offer a comment or two on retrofit itself. For many years the air carriers have opposed the idea that retrofitting aircraft with sound absorption materials would be a panacea for airport neighbors -- particularly with respect to the two- and three-engine aircraft. Now, with the Nation struggling to arrest inflation and conserve energy, it is highly questionable to enforce regulations that require wasteful expenditures but fail to accomplish their goals.

It is noteworthy that official government data gathered through noise monitoring at Washington National and Dulles airports indicate that for two- and three-engine aircraft the level of noise emission perceived on the ground from complying airplanes is not noticeably different from that of the non-complying airplanes. On roughly half the readings taken, the complying airplanes made as much or more noise than the non-complying counterparts, indicating that wind, weather, weight and pilot techniques have more to do with small differences in noise than does retrofitting.

Retrofitting the two- and three-engine planes will increase fuel consumption by roughly a million gallons per month. By contrast the quieter new technology aircraft are 20 - 30 percent more fuel efficient.

Retrofitting the two- and three-engine fleet will impose on the airlines one time costs of more than \$200 million, and additional operating expenses of at least \$5 million per year, all of which must be passed on to the passengers and shippers.

I will now return to specific issues raised by TITLE III of
H. R. 3942.

Compliance by foreign air carriers and U. S. air carriers en-
gaged in foreign air transportation.

Section 302 requires that the FAA adopt noise standards and a compliance schedule for foreign air carriers that are identical to the standards in 14 CFR 91, applicable to U. S. domestic air carriers, unless the International Civil Aviation Organization (ICAO) adopts compatible standards by January 1, 1980. Similar requirements would be levied on U. S. air carriers engaging in foreign air transportation.

The ICAO Council recently agreed to request all contracting States:

- "a. not to prohibit before January 1, 1988 the operation of foreign registered subsonic jet airplanes not conforming to the noise certification standards of Chapter 2, Part II of Annex 16 (Third Edition) into and out of their territories; and,
- b. to limit prohibition of operation to those airports which have been identified by them as having noise problems and have been so declared through appropriate means and to inform ICAO accordingly. "

We know of no additional action scheduled by ICAO on this matter before January 1, 1980. Therefore, adoption of Section 302 would appear to

obligate the Secretary of Transportation, acting through the Federal Aviation Administration (FAA) to adopt rules requiring foreign operators of non-complying aircraft to meet ICAO Annex 16 Chapter 2 standards on a time table similar to that spelled out in 14 CFR 91. U. S. operators of aircraft engaged in foreign air transportation will undoubtedly have to comply with the 14 CFR 36 - Stage 2 standards, which are slightly different from the ICAO Annex 16 Chapter 2 standards. An anomalous situation could result wherein an older DC9-30 of Canadian registry will be found by the Canadian government to comply with the Annex 16 Chapter II Standard, but an identical U. S. registered DC-9-30 will be found not to comply with the 14 CFR 36 Stage 2 regulations unless substantially modified. Both DC-9's could be engaged in air transport operations between the same city pairs. Perhaps the provision appearing at Line 3, Page 41 of H.R. 3942 is intended to preclude such a situation.

The most significant effect of adoption of the Section 302 proposals will be to ban B-707's and DC-8's from operation into and within the U.S., unless the airplanes have been re-engined. There is no SAM retrofit hardware committed to production for these aircraft. A secondary effect will be to preclude operation of older B-727 and B-737 aircraft into the U. S. unless these airplanes are modified to meet the ICAO Chapter 2 standards. Newer production models of the B-737 and B-727 meet the standard. As already noted, the picture for the older DC-9's is confused.

Study of Stage 2 Production Cutoff:

Section 303 requires the Secretary to conduct a study, and report to Congress, on the need for a cutoff in the production of Stage 2 aircraft and the implications of such a cutoff. The issue is complex and controversial. The airlines strongly support a comprehensive study to explore the costs and benefits of a cessation in production of Stage 2 aircraft. Until such a study is completed there is no basis for a rational decision on the question. We understand that the FAA has already ordered a study by an outside consultant on the ramifications of regulatory action to effect a Stage 2 production cutoff.

Since aircraft acquisition decisions are among the most critical decisions airline managements must make, we are vitally concerned with the proposed study. Some general comments on the subject of airline fleet planning are now appropriate -- comments that should be considered in the context of a study of the consequences of a Stage 2 production cutoff.

Current airline fleet planning decisions, which must necessarily apply well through the 1980's, are based on the assumption that certain models of the B-747 and DC-10, as well as the L-1011, the A-300, and at least the earlier versions of the DC-9-80, can meet Stage 3 noise requirements. Since manufacturer estimates indicate that there will be no new technology aircraft or suitable engines for a 100 passenger Stage 3 aircraft

till sometime past the mid-80's, the airlines have had to assume that there will be no major changes in short haul aircraft types before that time. Another key assumption has been that no new technology aircraft will appear that can meet the full size, range and performance characteristics of the B-727 family. We believe that these assumptions are valid.

Therefore, enactment of a production cut-off provision would force the airlines to change their carefully worked out capital improvement programs and may require the purchase of airplanes not sized to their route needs, with attendant economic penalties. In addition they would, in many cases, be forced to operate mixed fleets, with significant excess operating and maintenance costs after years of effort to standardize their equipment.

It thus appears that the cut-off provisions would work against the spirit of deregulation by intruding the hand of government into what had been the most important decisions of the market place, with consequent increases in the cost of air transportation.

The airlines support the study proposal in Section 303, in anticipation that a competent study will improve both government and industry understanding of this issue.

Waivers for Operation of Certain Two- and Three
Engine Aircraft

Section 305 provides for granting of waivers to operators of two- and three-engine non-complying aircraft if 60% of the individual air carrier operations are conducted at medium hub or smaller airports and 30% of the operations are at small hub or non-hub airports. The latter provision, applicable to both two- and three-engine non-complying aircraft, is further conditioned by a requirement that before a landing is made at a major hub airport a non-complying aircraft operating under a waiver must make the preceding takeoff from a medium hub or smaller airport.

We believe the waiver provisions in Section 305 will help to avoid counterproductive and costly retrofit of some airline aircraft that are engaged principally in service to smaller communities. Although there is room for debate on the exact percentages that should be incorporated in the legislation it appears that the proposals in Section 305 represent a reasonable compromise between advocates of retrofit for all non-complying two- and three-engine aircraft and those supporting relief from expensive and non-productive modifications for the smaller regional carriers not enjoying large annual profits.

The exact number of carriers that might secure retrofit relief from the provisions of Section 305 is uncertain, due to details not specified in the legislation - details that would have to be spelled out in implementing

regulations. However, the number of carriers would be small -- possibly six.

We believe the waiver provisions in section 305 will help insure that noise retrofit will not negatively impact service to smaller communities. This Section also provides that all airports would have the option of self exclusion from the 60 and 30 percent calculations.

We believe that the provision in Section 305(f) restricting the granting of waivers to those cases where all landings at major hub airports are preceded by takeoffs from a medium hub or a smaller airport is unnecessary to achieve the objective of encouraging retention of service at smaller communities. This restriction could result in an uneconomic use of airplanes. For example, an aircraft operating under a Section 305 waiver could not be substituted for an aircraft suffering a mechanical delay if the disabled aircraft were scheduled to operate from one major hub airport to another.

Amendment of Airworthiness Certificates

Section 306 provides a badly needed safeguard against a succession of hardware retrofit requirements imposed by regulatory action as engine or airframe modifications are developed that promise small source noise reductions. A continuous cycle of engine and airframe modifications would be extraordinarily expensive and add unnecessarily to the inflationary

pressures already forcing air fares up as the costs of fuel and labor escalate. This proposal would not preclude FAA action to tighten noise standards for new type design aircraft. The airlines strongly endorse the proposal in Section 306.

Effects of Noise on People

Let us turn now to the effects of noise on people. Generally speaking, these effects may be categorized as annoyance effects and health effects.

In order to discuss the effect of aircraft noise on people we must first address the problem of describing and clarifying the noise environment around an airport. This is not a simple matter. Single noise events vary widely in terms of sound intensity level, in frequency content and in duration. The reactions of individual people to a specific noise event will also vary widely. Therefore, a statistical approach is required to describe noise environments around airports.

A series of noise events around airports is described by a noise metric -- a term that represents a statistical summation of all the noise events that occurred or are predicted to occur over a given period of time. The time interval may vary from part of a day to a year. All cumulative noise metrics or descriptors are deficient in certain respects and difficult for laymen to understand and relate directly to individual perceptions of the severity of local noise exposure. These deficiencies or limitations in the noise descriptors fall into three categories:

First, there are two assumptions inherent in the equations used to compute cumulative noise exposure levels that remain subject to question by psychoacoustic experts.

- One assumption, known popularly as the "equal energy hypothesis" is inherent in the use of the logarithmic decibel scale to quantify noise levels. Simply stated, this results in weighting the impact of 10 aircraft flights, each at a level of 100 decibels, identically to the impact of 100 flights at 90 decibels. The mathematics of logarithmic summing of noise energy results in large changes in computed cumulative noise levels from small changes in number of operations of the noisiest aircraft. Also, the computed noise level gives no indication of the number of annoying events, the magnitude of the disturbances, or their duration.
- A second assumption holds that a substantial penalty should be assigned for nighttime flights. Thus, in the Ldn computation, one night flight is weighted as though it were equivalent to 10 day time flight; in the NEF computation the ratio is 12 to 1.

Second, computation of cumulative noise exposure level is subject to substantial error. All cumulative noise exposure computations require use of a mathematical model run on a computer and input to the model of a substantial amount of data. Both the computer model and the input data are sources of possible error. FAA advises that their Integrated Noise

Model is only reliable to within plus or minus 5 decibels. A 5 decibel error represents about 68 percent possible error in terms of total noise energy within a contour describing an area of equal noise level exposure and about 50 percent error in land area encompassed within a given contour.

Third, the cumulative noise exposure levels are difficult to interpret and may not be reliable indicators of community annoyance.

- A major study performed for NASA by TRACOR, Inc. concluded that: "Estimation of annoyance using noise exposure as the sole predictor is rather poor. The inclusion with noise exposure of certain attitudinal or psychological variables affords good prediction of individual annoyance."
- A 1975 study performed for FAA concluded that: "... there is unusually high variability in response to ... airport noise. Some persons are unusually bothered or concerned while others experiencing identical noise environments show no disturbance or annoyance. For example, at one major airport individual home owners and institutions are claiming damage due to noise from commercial aircraft with NEF levels ranging from approximately 28 to 43."
- EPA has identified in their "Levels Document" a range of yearly Day-Night Sound Levels adequate to protect pub-

lic health and welfare from the effects of environmental noise. These levels are widely cited as the basis for tolerable or intolerable levels of noise. However, EPA advises in a November 1978 publication that it is important that the noise levels in the "Levels Document" not be misconstrued. The EPA protective levels were derived without concern for technical or economic feasibility and contain a margin of safety to assure their protective value. According to EPA, these levels must not be viewed as standards, criteria, regulations or goals; rather they should be used as levels below which there is no reason to suspect that the general population will be at risk from any of the identified effects of noise.

There is a temptation on the part of the lay public to make judgments on the severity of their exposure to airplane noise based upon the inclusion of their home or work place within some specified contour describing an area of equal noise exposure. Due to the limitations cited above, such judgments may not be meaningful. The cumulative noise exposure descriptors are useful analytic tools, but must be used with caution and supplemented with additional inquiry in order to reach valid conclusions about the severity of noise exposure.

Moving now from problems associated with calculation and interpretation of noise descriptors to the annoyance reactions of people, research in psychoacoustics has revealed that an individual's attitude, beliefs and values influence the degree to which a person considers a given noise annoying. The response of an individual has been found to depend on:

- a. General sensitivity to noise. People vary in their ability to hear sound, their physiological predisposition to noise and their emotional experience.
- b. Attitudes about environment. The existence of undesirable features in a person's residential environment will influence the way in which he reacts to a particular intrusion.
- c. Activity at the time an individual hears a noise and the disturbance experienced as a result of the noise intrusion.
- d. Feeling of fear associated with the noise. The extent to which an individual fears physical harm from the source of the noise will affect his attitude toward the noise.
- e. Feelings about the necessity or preventability of the noise. If people feel that their needs and concerns are being ignored, they are more likely to feel hostility towards the noise. This feeling of being alienated or of being ignored and abused is the root of many human annoyance reactions. If people feel that those creating the noise care about their welfare

and are doing what they can to mitigate the noise, they are usually more tolerant of the noise and are willing and able to accommodate higher noise levels.

- f. Judgment of the importance and of the value of the primary function of the activity which is producing the noise.

Other factors, such as season of the year, time of the day, duration of the noise event, predictability of the noise, and ability to control the source of the noise also have a bearing on how an individual reacts to noise. Thus, it is not surprising that annoyance reactions of individuals vary widely to a single noise event. The problem is even more complex when trying to describe community reactions to a series of events of varying intensities, frequency characteristics and durations.

Numerous researchers have attempted to correlate the annoyance reactions of communities to noise produced by aircraft operations at an airport. Illuminating testimony on some of the more meaningful research on this problem was presented last year before the Senate Subcommittee on Aviation. Dr. Paul Borsky, Professor at the Columbia University School of Public Health, and Dr. Dixon Ward, Professor of Otolaryngology at the University of Minnesota and Co-chairman of the International Commission on Biological Effects of Noise, both leading psychoacoustic experts, testified about the significance of a retrofit program for two- and three-engine jet aircraft in terms of annoyance reduction that could be expected. Excerpts from Dr. Borsky's testimony follow:

"About 10 years ago I was dissatisfied with the accuracy and ability of field surveys to get at the nitty gritty of the details of how people respond to noise stimuli and developed a new

methodology using both laboratory-controlled conditions and the field study information.

"One of the first outputs of that laboratory research was the 1973 retrofit study on the 727, which you gentlemen, I'm sure, have. I sent you a copy which clearly demonstrated for single flyover comparison exposures a 3-decibel reduction was not reliably recognized. It was not significant. But a 6-decibel and a 10-decibel reduction were highly significant and meaningful in the way of noise reductions.

"It was suggested to me, as a matter of fact, by my colleague here, Dix Ward, what about the real environment situation where you have mixtures of aircraft flying over a community varying from time to time and varying in composition.

"When a change occurs in a given aircraft's noise propagation curve, could it be recognized as part of the context of a total fleet mix? And we designed a study to test this question, and I will be reporting to you on those results.

"We have done a number of field surveys in the J. F. Kennedy Airport, which is essentially our laboratory area. And we found that when we compared 11 different communities surrounding the JFK complex with different cumulative noise exposure indexes, that where the indexes were within 3 dB of one another, these cumulative noise indexes, there was no reliable difference in the annoyance responses in these communities. But where there

was a 6dB difference among these different communities around JFK Airport, there was generally a substantial difference, a reliable difference, in the reduction of the amount of annoyance in the less-noisy communities.

"Now, to get to the special laboratory study which we did last year. We had 384 residents actually living in neighborhoods around JFK Airport, half of them within about a mile of the airport, under what I consider to be pretty intense noise exposures, and half living about 5 miles, and 5 1/2 miles away, with much less noise exposures.

"We invited these people into our laboratory for controlled noise exposure sessions. We exposed each subject to the noise of 17 planes per half hour in our laboratory.

"So, 17 flyover per half hour with the Kennedy mix of an international airport of which 40 percent were 707's, 30 percent were the 747's, only about 18 percent were the 727's. They're not a major factor in the Kennedy complex. And 10 percent were the DC-10's.

"We also had four retrofit conditions built into the experiment. We had the untreated condition, the way they are now, indoor noise levels of these aircraft.

"Now, when you've the 5.5 dB reduction in LEQ values in the first retrofit assumption, you had in the close areas about a 20

percent reduction in high annoyance, which is consistent with survey data. And in acceptability, we asked people to make two judgments in our experiment. The first was: How annoyed are you? And we gave them a 10-point scale with 10 defined as "extremely annoyed" and "not annoyed at all" for zero. They would pick a number in between to indicate how they felt after the half-hour session, integrating all the noise exposure for the half-hour period.

"We also asked them: 'If you had to live with this all the time in your own home, in your own living room, do you think you could learn to live with it and accept it?' So we had an acceptability judgment and we had an annoyance judgment. The two were not identical, Senator.

"People realize in an urban environment that they have to put up with some stress and some annoyance, and they're willing to do so. At what point where they feel it's just too much and unreasonable, you get the nonacceptance.

"So, where you had the 5.5 dB reduction in the L-equivalent in close areas, you had a 20-percent reduction in high annoyance, which is meaningful, and a 15-percent increase in the amount of acceptance. Some people still felt it was not acceptable, even though it was somewhat less annoying.

"When you had a cumulative 10 dB reduction, between phase 1 and 2 in our retrofit scheme, you had a 30-percent reduction, almost a third, in the amount of high annoyance, and you had about a 25-percent increase in the amount of acceptability.

"So those, I think are clearly meaningful amounts of annoyance reduction that you achieve by this 5.5 and 10 dB cumulative noise index exposure reduction.

"But the LaGuardia, Newark, Minneapolis, Chicago, Atlanta, Miami International, where your three-engined, the DC-9 and your 727's are important factors in the fleet. If they had reductions from 6 to 7 dB, I think you could conclude from the data which we ran in the Kennedy experiment, which are not specific only to the larger aircraft. The scales of DBA and EPNL do a good job, as some recent research by a colleague of mine from Northeastern, Bert Scharf, has shown, that you can assume that any plane that gave you a 6 to 7 dB reduction would give you comparable reductions in annoyance in those smaller airports than they do with the big planes in the Kennedy Airport.

"Where it's less than 3, Senator, 3 dB, I would state with some certainty that you would have a very minimal, unreliable effect. Where it's 5 1/2 to 6 to 7, I would state with equal feeling of certainty that you would have a substantial beneficial effect."

Dr. Ward later submitted the following written comments:

"The probable effect of retrofit in reducing public annoyance is still in doubt, just as it was last summer, because no new evidence has appeared since then. The various studies conducted by Professor Borsky and others, including myself (reinforced, I suspect, by personal observation by your Committee during last year's listening tests), make it clear that:

- (1) If two successive aircraft flybys differ in peak level by less than 5 dB, no significant difference in human reaction will occur. Indeed, most individuals will not be able to hear that there is in fact any difference in loudness.
- (2) However, if the difference between these two closely-spaced flybys is more than 6 dB, then some people will be able to hear the difference in loudness the average response of many listeners will be statistically significantly different from a guess.
- (3) On the other hand, even when the difference is as much as 10 dB, some individuals will still err when trying to pick out the loudest one. This was demonstrated in our laboratory.

"Now, the above facts apply when the noises to be contrasted occur in close succession. It is well known, though, that the ability to compare two sounds -- not only in loudness, but in any respect --

Diminishes with the time between them: that is, the longer the intervals between the sounds, the greater will be the fraction of people who incorrectly estimate which was the louder. Thus if, as Professor Borsky's 1977 study indicates, an average difference of 6 dB is barely large enough to make a significant majority of his moderately-fearful housewives aware, in a comparison of two half-hour tapes of assorted flybys with only a few minutes between tapes, of which sample involved the noisier aircraft, then separating these samples by several days or weeks would result in even greater uncertainty."

FAA documentation and statements reinforce the expert opinions advanced by Professors Borsky and Ward. In the preamble to FAA Amendment 91-136 - the amendment that incorporated the rules in 14 CFR 91, Subpart E, that require retrofitting, reengining or replacement of non-complying airplanes - the FAA cited as partial justification for adoption of the new rules the following:

"We believe that (these) noise reductions in aircraft noise level represent significant and beneficial improvements, which will provide meaningful and perceivable relief to airport neighbors. Recent research has indicated clearly that aircraft noise reductions on the order of 6EPNdB are quite apparent to residents near airports and result in substantially less annoyances to those residents."

In a May 1975 paper presented to the XIIe Congress International Aeronautique in Paris, Dr. John O. Powers, FAA's Chief Environmental Scientist, made the following comments on Dr. Borsky's research involving the annoyance responses of persons residing in the vicinity of John F. Kennedy International Airport.

"It was found that there was a 50 percent reduction in the number of test subjects who had expressed highest annoyance to the standard B-727 aircraft as compared to the acoustically treated B-727. This 50 percent reduction in annoyance due to a 6 EPNdB improvement in the aircraft acoustic environment is considered to be statistically significant. It is probable, however, that noise increments less than this would be considered marginal at best."

Thus, it is apparent that there is an important body of expert opinion supporting the view that source noise reductions of less than 5.5 to 6 decibels will not produce a significant reduction in annoyance experienced by airport neighbors. This is precisely why the airlines have opposed retrofit of the older two- and three-engine B-727, B-737, DC-9 and BAC-111 aircraft. Retrofit of these aircraft will not produce significant relief from source noise that is being experienced by those living in noise impacted areas and complaining vigorously about the problem. These people would not be able to ascertain any difference

in the noise environment before and after retrofit of the older two- and three-engine jet aircraft. On the other hand, re-engining or replacement of the noisier 4 engine narrow body jet aircraft will clearly produce meaningful noise relief for airport neighbors -- on the order of 10 to 12 decibels -- and the airlines do not object to the FAA rules which require such action.

Turning now to the health effects of noise, two aspects of the problem warrant comment: concern about hearing loss and the so-called stress diseases of adaptation: ulcers, asthma, high blood pressure, headaches and colitis.

There is no evidence that we know of documenting permanent hearing loss suffered as a result of aircraft noise exposure to persons living near a civil airport in the United States. There is a history of permanent hearing loss suffered by persons working on airport ramp areas, but this is an occupational health exposure problem which has been dealt with successfully by a requirement of persons working in high noise exposure area to wear ear protectors.

A significant study on hearing loss in children living near Logan International Airport in Boston was conducted by researchers at Massachusetts General Hospital. The results of the research were reported in the May 1975 issue of "Aviation, Space, and Environmental Medicine."

A copy is attached for the record. The researchers found that the incidence of hearing loss in the group of children living directly under flight paths or immediately adjacent to runways was not significantly different from the overall average.

On the second aspect of the public health effects of noise -- particularly the adaptive diseases of stress -- EPA advises in their August 1978 publication, titled, "Noise: A Health Problem" that "well-documented studies to clarify the role of noise as a public health hazard are still required". Although we are not professionally competent to comment on the scope of adequacy of medical research conducted on all the public health aspects of noise, our knowledge of the problems confirms the quoted EPA judgment. We know that EPA has recently sought Congressional authorization for additional funds to conduct health effects research and action to date indicates that such funds will be authorized.

Concluding Remarks:

TITLE III of H.R. 3492 is important and necessary. The proposals for waivers for non-complying two- and three-engine aircraft represent a compromise between competing interests. The airlines would prefer to see the retrofit waiver provisions expanded since we sincerely believe that retrofit of these airplanes will not produce meaningful relief for airport neighbors.

This completes my statement. I will be happy to answer your questions.

Mr. FLORIO. Yes.

Mr. Ginther, welcome to the committee.

STATEMENT OF ROBERT E. GINTHER

Mr. GINTHER. Thank you, Mr. Chairman.

I am Robert E. Ginther, president of the Association of Local Transport Airlines, appearing before you this morning representing 14 regional air carriers who operate in all sections of the United States. I will summarize my prepared text, Mr. Chairman, in trying to meet your goal of saving time this morning if that is satisfactory.

Mr. FLORIO. Yes. Without objection your entire statement will be entered into the record.

Mr. GINTHER. Thank you.

First let me say that our association supports the Public Works and Transportation Committee approved noise bill, H.R. 3942 and urges you and your committee to support its being reported from this committee. In addition, we also support the Senate enacted noise bill S. 413 and believe it preferable to H.R. 3942 for reasons I will discuss in a moment.

Mr. Chairman, we have pointed out in our prepared testimony that we believe that current Federal Aviation Administration noise regulations have been promulgated not so much to provide community noise relief but to provide political relief to officeholders, Congressmen and Senators who have been barraged by complaints from several million Americans living around the Nation's noisiest jetports.

We feel because of this fact that the current program will provide very limited relief in most instances and that the costs of it simply are not worth the benefits to be achieved. The most troublesome part of the current regulations is the requirement that the smallest jet airplanes, the Boeing 737, Douglas DC-9 and BAC-111, be retrofitted with noise suppression materials by 1983. Mr. Chairman, these are the quietest airplanes in the stage II U.S. jet fleet. They are powered by two engines, they are of relatively small size and they serve 300 small cities throughout the United States.

They are not the noisy offenders such as the 707's and DC-8's which cause so much community discomfort at the Nation's largest airports.

I would also emphasize that retrofitting these very small jet airplanes with sound absorbent material as the FAA has ordered, will produce noise reductions so slight that the average person will not find it perceptible on the ground. In addition to this, on takeoff the noise reductions will be approximately 1 decibel or less which of course is not perceivable to anyone. Yet, Mr. Chairman, to provide this unreasonable and unnecessary fix it will cost the airlines and our passengers approximately \$132 million just for the twin-engine fleet and waste millions of gallons of jet fuel each year.

On one twin jet aircraft, the BAC-111, the fuel penalty associated with retrofit is reported to be more than 1½ percent.

That brings me to a discussion of the two bills now pending in the Congress. First, the airline industry and the regional carriers strongly support the Senate-passed bill S. 413 as a commonsense approach to the problem.

I know you heard last week from environmental witnesses and EPA who took exception to the Senate bill. However we find it is a commonsense approach and will certainly save millions of dollars and provide an incentive for new airplanes to be manufactured rather than the retrofitting of old airplanes.

As you know, the most controversial feature of the Senate bill is the requirement that retrofit not be performed unless it can provide perceptible relief to people on the ground. Second, the Cannon bill, provides a new technology incentive which encourages airlines to phase out the larger, noisier aircraft in favor of the new technology jets which do operate much quieter than do the current generation of jet equipment.

The bill approved by the House Public Works and Transportation Committee, H.R. 3942, provides a more limited waiver from the retrofit requirements of part 36 of the Federal Aviation Regulations than does the Senate bill and, therefore, is less desirable. In order for an aircraft to be exempted from the retrofit requirement, the plane must be operated primarily in small cities, and the bill requires that, before serving a major hub terminal, the aircraft must first stop at a small- or medium-hub terminal. Such a requirement could cause severe scheduling problems for our airlines and, therefore, it is difficult to predict the number of aircraft which might be exempt from the retrofit requirement as a result.

A couple of final points, Mr. Chairman. As everyone who has studied the aircraft noise issue knows, the real answer to quieter airports is the new technology aircraft incorporating the high bypass ratio engines. Several witnesses, earlier before this committee, stressed the desirability of acquiring new technology aircraft over retrofit of old airplanes in order to maximize noise reduction. We quite agree that such a solution is far preferable and would provide the public affected significant relief rather than marginal relief.

The trouble is, that for the regional airlines there is not yet developed or even on the drawing boards a new technology aircraft slated to replace our current twin jets. Unfortunately, the airplanes we operate are in the 100- to 110-seat category because of the less dense structure of our route systems. The new technology airplanes, such as the DC-9-80, the B-757, and B-767, are 160-seat aircraft and larger—much too big and expensive to operate for the regional airline industry.

Therefore, we don't have the alternative of purchasing or ordering the new generation jet equipment and don't know when we will have. Past practice tells us that it takes 4 to 6 years to develop a new aircraft model, and at present the manufacturers have no plans to produce the new technology aircraft in the size we need.

Finally, I would like to point out that the airlines I represent are the airlines who have historically served the Nation's small cities and communities, linking them with the major metropolitan areas.

As a result of deregulation, the regionals have left some of the smallest points, turning them over to commuter airlines who are better suited to serve them. Nonetheless, we still serve over 300 small points, but our ability to continue to do so will be influenced by our relative ability to increase revenue to meet what are ever-rising costs.

Some communities have seen certificated air service move to other areas of the country because of the opportunity for better revenues and better profits, thus leaving some of the smaller cities with commuter airline service which in some cases has not been acceptable to the community.

Parenthetically, at the Nation's small towns, aircraft noise, rather than a nuisance, is often a sound eagerly awaited as a symbol of the vast importance of the jet airplane in connecting rural America to the national air transportation system.

The airplane noise, as I say, is welcomed rather than being a nuisance. To the extent that the regional airlines are forced to spend tens or scores of millions for this wasteful and ineffective retrofit program, our revenue needs will increase accordingly, and it will be that much more difficult to continue to serve the small communities we have served over many years. It makes much sense both to us and to the communities we serve, as well as to citizens in the Nation's largest cities, to have a reasonable aircraft noise program and one that will produce results rather than momentary political public relations. We believe S. 413 fills the bill, and H.R. 3942 is a big step in the right direction.

I appreciate the chance to testify today, Mr. Chairman. Your staff has been very kind in accommodating our needs. We will be happy to try to answer any questions you might have.

[Mr. Ginther's prepared statement follows:]

STATEMENT
OF
ROBERT E. GINTHER
PRESIDENT, ASSOCIATION OF LOCAL TRANSPORT AIRLINES
BEFORE
THE SUBCOMMITTEE ON TRANSPORTATION AND COMMERCE
HOUSE INTERSTATE AND FOREIGN COMMERCE COMMITTEE
JUNE 12, 1979

Good morning, Mr. Chairman. I am Robert E. Ginther, the president of the Association of Local Transport Airlines, the trade group representing 14 regional air carriers who operate in all sections of the United States.

We appreciate the opportunity to testify today on the aircraft noise issue and to tell you how it peculiarly affects the regional air carriers.

First, let me say that our Association supports the Public Works and Transportation Committee-approved noise bill, H.R. 3942, and urges you and your Committee to support its being reported from this Committee. In addition, we also support the Senate-enacted noise bill, S. 413, and believe it preferable to H.R. 3942 for reasons I will discuss in a moment.

Last week you heard much of the aircraft noise issue from environmental witnesses and community spokesmen, attacking both the Senate and House noise bills. Those statements need to be put in the proper context. Mr. Chairman, the fact is that the aircraft noise problem is not a major national problem. In survey after survey, Americans don't even mention it when asked about domestic issues or domestic matters of concern. Aircraft noise, however, is an issue around perhaps a dozen of the major U.S. jetports which serve our largest cities. In those areas several million citizens are heavily impacted by aircraft noise and the quality of their life is diminished as a result.

Not surprisingly, these citizens have used the political process to seek relief from the aircraft noise problem and, over the years, have pressured the Federal government to develop a national program to control aircraft noise at the source. This is a program to quiet the current fleet of jet aircraft. The trouble is that much of the current FAA/DOT program will not provide any noticeable noise relief to the several million Americans affected and will cost the airline industry and ultimately our passengers millions of dollars in unnecessary costs and will result in the waste of millions of gallons of precious fuel.

The current FAA program of noise control has been fashioned not to provide meaningful relief to those most impacted by aircraft noise, but to affect a political solution in which the policy-makers and politicians have told those who complain that the program, if only the airlines will get on with it, will solve the noise problem. We predict, if the current regulations stand unmodified, that by 1983, when the present fleet of small aircraft are supposed to be quieted, the affected public will believe that it has been grossly misled.

The most troublesome part of the current regulations is the requirement that the smallest jet airplanes, the Boeing 737, the Douglas DC-9, and the BAC-111, be retrofitted with noise suppression material by 1983. In addition, at least half of those aircraft must be retrofitted by 1981. These small jets are the backbone of the regional airline fleet and provide service to more than 300 small cities and towns throughout America. They are also the least noisy in the system because of their twin-engined power system and their relatively small size.

I want to emphasize that retrofitting these small jets with sound absorbent material, as the government has ordered,

will produce noise reduction so slight that it will not be perceivable to the average human being standing on the ground. In addition to that astonishing fact, retrofit of twin-engine airplanes will not produce even one decibel of noise reduction in the takeoff phase of flight. Imagine, not one decibel of reduction.

And yet, Mr. Chairman, to provide this unreasonable and unnecessary fix will cost the airline industry and its passengers approximately \$132 million and will result in wasting millions of gallons of jet fuel each year. On one twin jet aircraft, the BAC-111, the fuel penalty associated with retrofit is more than 1.5 percent.

We believe that it is a gross misapplication of governmental policy to force the airlines to comply with regulations, the results of which do not produce noise reduction perceptible to the average human being, at such a tremendous cost; regulations which will result in a backlash from the public which is expecting significant noise relief because of the vastly inflated claims made by politicians regarding the efficacy of retrofit.

That brings me to a discussion of the two bills now pending in the Congress. First, the airline industry and the regional carriers strongly support the Senate-passed bill S.413 as a common sense approach to the problem. First and most important, the bill exempts from any retrofit requirement all aircraft, the retrofitting of which would produce noise reductions so slight that they are imperceptible to the human ear. This provision would exempt the twin-engine airplanes being operated by the regional airlines. Second, the Cannon bill provides a new technology incentive which encourages airlines to phase out the larger, noisier aircraft in favor of the new technology jets which do operate much quieter than do the current generation jet aircraft.

The bill approved by the House Public Works and Transportation Committee, H.R. 3942, provides a more limited waiver from the retrofit requirements of Part 36 of the Federal Aviation Regulations than does the Senate bill and, therefore, is less desirable. In order for an aircraft to be exempted from the retrofit requirement, the plane must be operated primarily in small cities, and the bill requires that, before serving a major hub terminal, the aircraft must first stop at a small or medium hub terminal. Such a requirement could cause severe scheduling problems for our airlines and, therefore, it is difficult to predict the number of aircraft which might be exempt from the retrofit requirement as a result.

A couple of final points, Mr. Chairman. As everyone who has studied the aircraft noise issue knows, the real answer to quieter airports is the new technology aircraft incorporating the high bypass ratio engines. Several witnesses, earlier before this Committee, stressed the desirability of acquiring new technology aircraft over retrofit of old airplanes in order to maximize noise reduction. We quite agree that such a solution is far preferable and would provide the public affected significant relief.

The trouble is that for the regional airlines there is not yet developed or even on the drawing boards a new technology aircraft slated to replace our current twin jets. Unfortunately, the airplanes we operate are in the 100 to 110-seat category because of the less dense structure of our route systems. The new technology airplanes, such as the DC-9-80, the B-757, and B-767, are 160-seat aircraft and larger -- much too big and expensive to operate for the regional airline industry. Therefore, we don't have the alternative of purchasing or ordering the new generation jet equipment and don't know when we will have. Past practice tells us that it takes four to six years

to develop a new aircraft model, and at present the manufacturers have no plans to produce the new technology aircraft in the size we need.

Finally, I would like to point out that the airlines I represent are the airlines who have historically served the nation's small cities and communities, linking them with the major metropolitan areas.

As a result of deregulation, the regionals have left some of the smallest points, turning them over to commuter airlines who are better suited to serve them. Nonetheless, we still serve over 300 small points, but our ability to continue to do so will be influenced by our relative ability to increase revenue to meet what are ever-rising costs. Parenthetically, at the nation's small towns, aircraft noise, rather than a nuisance, is often a sound eagerly awaited as a symbol of the vast importance of the jet airplane in connecting rural America to the national air transport system. To the extent that the regional airlines are forced to spend tens or scores of millions for this wasteful and ineffective retrofit program, our revenue needs will increase accordingly, and it will be that much more difficult to continue to serve the small communities we have served over many years. It makes much sense both to us and to the communities we serve, as well as to citizens in the nation's largest cities, to have a reasonable aircraft noise program and one that will produce results rather than momentary political PR. We believe S. 413 fills the bill, and H.R. 3942 is a big step in the right direction.

That concludes my testimony, Mr. Chairman. I will be happy to try and answer any questions which the Committee may have.

Mr. FLORIO. When you say smaller communities, are you talking about San Diego and Cincinnati? Would they fit into the definition of the nonmajor communities you are talking about?

Mr. GINTHER. The size of communities for arration purposes is generally defined by the number of passengers using the airport that serve the cities. When I speak of small cities I mean airports that serve less than one-half of 1 percent of total air transportation passengers in the United States.

Mr. FLORIO. As an example, San Diego?

Mr. GINTHER. San Diego is not a small city.

Mr. FLORIO. It is not a small city under the definition you are using?

Mr. GINTHER. No.

Mr. FLORIO. Mr. Madigan.

Mr. MADIGAN. Mr. Ginther, Mr. Florio is the gentleman bothered by the noise at airports. I am the backyard mechanic. I want to try to understand some of the things you said earlier and I am not sure that I do. I thought you said that there was a difference between noise emissions, depending upon whether or not a plane was taking off or landing. Is that correct?

Mr. GINTHER. Yes, sir. The retrofit requirement does provide more relief measured in decibels on the approach phase of flight.

Mr. MADIGAN. I think that is because, and you correct me if I am wrong, the noise you hear when an airplane is approaching is an engine noise rather than an exhaust noise. That whine is the noise in the fan jet that is making that noise?

Mr. GINTHER. That is my understanding.

Mr. MADIGAN. Retrofitting would be installing some kind of insulation that would diminish that high pitched whining you hear?

Mr. GINTHER. That is correct.

Mr. MADIGAN. On takeoff the noise you hear from a jet engine is an exhaust noise that would not in anyway be impacted by the retrofitting, the insulation or whatever it is, is that correct?

Mr. GINTHER. That is correct. On a DC-9 aircraft the takeoff noise would be diminished less than 1½ decibels by retrofitting?

Mr. GINTHER. A decibel or less.

Mr. MADIGAN. That is because it is a different kind of noise and the retrofitting really does not get to what causes the takeoff noise?

Mr. GINTHER. The retrofitting provides insulation, sound-absorbing material, around the engines nacelle which does quiet the noise from the engine on the approach phase but does not deal with the jet blast or takeoff blast or exhaust roar which comes from the takeoff phase of the flight.

Mr. MADIGAN. That is what rattles the windows in the motel where I sleep every other weekend in Champaign, Ill.

Mr. GINTHER. You have jet noise problems there?

Mr. MADIGAN. DC-9's.

Another thing that I didn't understand is that when you talked about a 100- to 110-seat category you said there wasn't any new technology. Did you mean to say that the people who are building DC-9's, or whatever other aircraft would fall in that category, are not building an airplane that would meet the noise standards?

Mr. GINTHER. What I was trying to point out is that the greatest area of noise relief will come from the use of the so-called stage 3 airplanes some of which are currently in use such as the DC-10, and the Lockheed 1011. Others are being developed, such as the Boeing 757, 767, and Douglass DC-9-80. All of these aircraft incorporate the high bypass jet engine which does provide significant relief. However, in the small jet category, that is, a jet that will be comparable to a DC-9 or 737, 100 to 120 seats, none of the manufacturers presently has plans to manufacture such an airplane.

I am sure that market forces in years to come will require that they do develop a new technology jet for that market but that is at least 5 or 6 years away.

Mr. MADIGAN. I am not at all sure that is clear to me.

Mr. FLORIO. If the gentleman will yield, you point out our dilemma. I have already made reference to the need to get some of the manufacturers here to testify. The most significant dilemma that your question presents is your feeling that the ideal way to go is with new technology, and that your constituents feel that need.

At the same time you say that the new technology is at least 4 to 6 years away, if anyone was interested in it, and the manufacturers are not interested in it. Therefore it seems the inevitable conclusion that retrofitting has to be undertaken because there is really no alternative that is feasible in the immediate future, the immediate future being into the 1990's. If I am unclear, or if there is something I am missing, could you amplify on that point?

Mr. GINTHER. I think your statement is generally correct. However, what I am telling you is that today's 100- to 110-seat airplane, that is the airplane that flies into the small communities of this country, does not have a replacement on the horizon. However, the 757 and 767; for example, or the DC-9-80 are meant to replace the larger ships in the U.S. fleet such as the 727, Boeing 707, DC-8, the airplanes that do contribute more noise than the twin jets.

In the realm of the larger airplanes there is indeed a replacement program underway—the airplanes will be coming on stream in the next decade—but for the smallest jet operators such as ourselves we don't have that airplane.

Mr. FLORIO. Doesn't that dictate the need for retrofitting those small airplanes?

Mr. GINTHER. It does only if you accept the fact that the retrofit program will provide meaningful and significant relief to people on the ground who are going to appreciate the millions of dollars that go into the program to provide that relief.

Mr. FLORIO. Were you present last week when we had some testimony, I believe it was out of Minneapolis, that the smaller retrofitted airplanes which were being used with new takeoff techniques showed a rather substantial reduction in noise and increased fuel efficiency?

Did you hear that? If you did, could you comment on it?

Mr. GINTHER. I did hear that testimony.

Mr. VON KANN. I think Mr. Fleming could probably respond to that because he has worked with our Flight Operations Committee on these takeoff techniques.

Mr. FLORIO. I think it was Northwest Orient.

Mr. FLEMING. Thank you, Mr. Chairman. Unfortunately the matter of fuel efficiency and reduced noise due to takeoff procedures are mixed up. The fuel efficiency improvement came on the Boeing 747 airplane, not on the other airplanes.

Now as to the matter of operating procedures, the testimony of Mr. Rockenstein was to the effect that the procedures used by both Northwest and North Central provided relief to persons on the ground from noise produced by two- and three-engine airplanes as well as others. The airlines are currently in the process of reassessing their takeoff procedures due to the fact that the FAA recently published an advisory circular on that subject. We expect on September 1 of this year to implement the procedure which is used by North Central Airlines. Therefore, a large number of citizens around the country will enjoy those improvements.

Mr. FLORIO. In reference to Mr. Madigan's question; that is, in making the distinction between approaches and takeoffs, and your conclusion that there was less of a benefit in terms of noise reduction on the takeoff aspect, am I correct in noting that this does not apply to retrofitting in conjunction with some of these new takeoff procedures? Can we anticipate reduced noise levels from retrofitting, particularly when combined with some of these newly prescribed takeoff procedures? Is that a factual statement?

Mr. FLEMING. Mr. Chairman, to try a new twist to what Mr. Madigan asked about and what Mr. Ginther talked about, the sound absorbing material that goes into the retrofit hardware is most efficient at reduced thrust, which is why you get the biggest gain on approach, rather than on takeoff where the airplane is at full thrust. Now the object of the procedure which has been developed by Northwest and North Central is to try to maximize whatever small benefit can be squeezed out of that sound insulation.

Bear in mind that the newly produced airplanes since December 1, 1973, have come from the manufacturers with that material in them and the procedures have been developed to gain maximum advantage from the hardware at hand.

Mr. MADIGAN. What exactly is this new procedure? I assume it is some kind of noise abatement takeoff procedure. Could you describe it to me, how it is different?

Mr. FLEMING. Yes, sir, I could.

The airlines have been using noise abatement procedures on the turbojet airplanes ever since we started flying them. However there has been a lengthy debate over what constitutes the most effective procedure. Of course as most procedures go, this one has evolved over a period of time.

Northwest and North Central developed a variation which they have felt for years was the most effective possible means of flying the airplane in terms of noise abatement. FAA examined the question last year in great detail. As a result they published the advisory circular I referred to, 91-53, which represents their best judgment of how to fly low bypass ratio airplanes and high bypass ratio airplanes.

The difference that you are referring to is in the climb thrust that is used between the time the flaps are retracted and 3,000 feet above the airport. That is the only difference. In the past typically airplanes have been flown in that segment of the climb using

normal climb thrust. The newly developed procedure will utilize a climb thrust value somewhat lower than normal climb thrust. That is the difference, in this case trying to take advantage of the ability of the sound absorbing material to reduce somewhat the high frequency component of the noise to which you referred earlier.

Mr. MADIGAN. I want to see if I understand what that is. Does that mean you take the plane off slower at lower engine revolutions?

Mr. FLEMING. No. There is no difference up to the point where the thrust is reduced. In other words, the airplane has taken off and climbed to roughly 1,200 feet above the airport at takeoff thrust. At 1,000 feet above the airport the pitch attitude at which the airplane is flown after rotation is reduced to allow for acceleration. The airplane must accelerate in order to retract the flaps. The flaps are retracted to reduce the drag. Less drag, less thrust, less noise.

Mr. MADIGAN. Is that already being done at Dulles?

Mr. FLEMING. No, sir, the procedure as it is spelled out in the advisory circular is not being used except by Northwest and North Central to the best of my knowledge. I made a misstatement, because those airlines do now operate out of the Washington area and Northwest at least operates out of Washington National, and they operate long-range flights out of Dulles.

Mr. MADIGAN. I would like to go back, Mr. Chairman, to Mr. Ginther. Isn't there a new DC-9 aircraft available that meets all of the noise abatement requirements?

Mr. GINTHER. Yes. You are speaking of the DC-9-80 which is currently under development by McDonnell-Douglas. It is an aircraft that will be approximately 160 seats.

Mr. MADIGAN. I don't want to interrupt you but I am under the impression that airlines could buy an airplane, if they had the money, to replace the noisy airplanes that would meet the noise requirement in existing law.

Mr. GINTHER. That is correct. The DC-9's and the 737's which are purchased today are equipped at the factory with the sound suppression kits. We purchase the airplanes with the kits on, and they do meet FAR 36 as it exists today; however, these are not stage 3 airplanes.

Mr. MADIGAN. What you are telling me is that there is some further requirement coming, and that the airplanes being built will not meet the future requirements; is that what you are telling me?

Mr. GINTHER. The FAA presently has underway a study as to whether the current FAR 36 regulations need to be advanced even further; that is, provide for more noise relief.

In the thinking of the FAA at this time, there is actively under discussion the question of in the future requiring all aircraft to be stage 3 airplanes, that is, the new technology, high-bypass-type airplane. That is not presently a regulatory requirement.

Mr. FLORIO. If the gentleman will yield—

We have an FAA witness here who we will ask about this later on; but is that point relevant to the current requirements, in the sense that the industry is asking for exemption from the current requirements? And I understand Mr. Madigan's point and your response, that this particular airplane can comply with all of the

current requirements and the prospective requirements that are written into law now.

What you are injecting is that there is a study which may increase those requirements. That is not relative to what we are talking about today, in terms of the existing law. Is the plane which Mr. Madigan is making reference to, operational and complying with all of the existing respective requirements?

Mr. GINTHER. That is correct. The planes we purchase today do comply with current regulatory requirements.

Mr. VON KANN. If I might add to that, Mr. Chairman, I do think there is a relevance because we are now in what we call stage 2, which is the standard which was promulgated in 1969.

There is not much question that in time the fleet will have to meet stage 3 and possibly even stages beyond that as technology advances.

So, the relevance, to me, is this: The more money you put into buying stage 2 aircraft, which is still just a step along the way, the more money you divert from the purchase of the newer and better, quieter, more fuel efficient aircraft which we are going to have to go into as time goes on.

There is a relationship there, although it is hard to define the tradeoff in exact terms.

Mr. MADIGAN. Perhaps as a last question, I would like to try to understand one of the economic arguments that has been made to us that I didn't understand at all.

I understand there is some suggestion that there are differences in the economics between 727's or larger aircraft and the smaller DC-9-type aircraft, that it would be economically possible, or economically feasible, to put new engines on the larger aircraft and in effect run them out, depreciate them out; and that is not an option that is available for the two-engine aircraft. I don't understand why it would work in one instance and not work in the other instance.

Mr. VON KANN. I think I can take a crack at that, sir.

Reengining is a very expensive process; it runs up somewhere in the ballpark of \$10 million an aircraft. Now, with DC-8's, for example, where they have greater capacity and more capital involved, it makes a certain amount of sense, and some of our carriers are apparently planning to do that.

But it would not make economic sense to try to do that with the smaller planes. The cost would be too high in relation to the investment in the aircraft.

Mr. FLORIO. If the gentleman will yield—

I was working on the assumption that the total cost of retrofitting between now and 1985 of two- and three-engine planes was \$350 million. You mentioned a figure of \$200 million. Let us accept mine as being more generous in terms of the total amount of costs.

Is that a fair statement of the range, from \$200 million to \$350 million?

Mr. VON KANN. Oh, yes, very definitely. Based on our estimates, we think it is closer to \$200 million, or a little over \$200 million, but the range is certainly not out of line.

Mr. GINTHER. Mr. Chairman, one of the points I would like to make is that in the discussion of carrier profitability, carrier abili-

ty to come up with the funds to provide the retrofit requirements that the Government has imposed, maybe a couple of statistics would be illustrative: Frontier Airlines, a company that is based in Denver, last year earned \$13.6 million net profit, which was its best year ever. Their retrofit requirement is about \$5.5 million. Piedmont Aviation's net profit last year was \$5.6 million; its cost of retrofit is estimated at \$7.9 million.

Mr. FLORIO. You are talking about the annual earnings; we are talking about the total cost for the total industry of \$200 million between now and 1985.

Mr. GINTHER. I am talking about the different impacts this requirement has on the small carriers.

Mr. FLORIO. I understand that.

Mr. GINTHER. Vis-a-vis the larger carriers.

Mr. FLORIO. Certainly the biggest portion of that \$200 million will be from the larger firms, so as you go down to the smaller firms with perhaps smaller earnings, you are talking about a smaller impact than the number you are referring to, \$13 million annually, as their earnings. You are talking about spreading whatever the 6-year earnings are into the relatively small amount between now and 1985.

I note the 11 major carriers spent almost \$300 million in 1978 just for advertising. I am not overly convinced, particularly when I see that last year's earnings were \$1.1 billion, that the point has been made that, well, they may not be that substantial because of rising fuel costs, although I assume those rising fuel costs are being rolled into the fares; and I travel quite a bit on airlines, and I don't see any lack of passengers. As a matter of fact, there seem to be more and more passengers. I am not sure there is any elastic relationship between higher fuel costs, the high costs, and people flying airplanes.

Mr. VON KANN. We are trying right now to get the fuel cost passthrough expedited in light of what is happening in fuel costs; but the fact is that somebody pays the bill, somebody is paying the money, and the question is, is the money buying anything of value?

Mr. MADIGAN. I can say this, Mr. Chairman: I understand some of the things that you people have said this morning. I am also sympathetic with the young man who was here from New Jersey. I think there is a difference between consciously going out and buying a home adjacent to Dulles Airport, knowing full well that the airport and the noise problem are there; and, on the other hand, living in an established neighborhood where your parents lived before you and having the airport come in and having the noisy airplanes follow the airport. I think they are two entirely different things.

One is a conscious decision by the buyer of a home. Another is just a person or group of people trying to maintain the stability of what to them has been a very desirable neighborhood.

I am sympathetic with the people in that latter category; but I am also sympathetic to economic arguments that I can understand.

I don't understand the economic argument of one plane versus another plane as those arguments relate to furnishing new engines or doing things of that kind.

I would like very much if you gentlemen would make available to the subcommittee some detailed analysis that helps you arrive at that argument, that will help me to understand the argument as we move along.

[The following material was received for the record:]

June 20, 1979

**Replacement, Reengining or Retrofit:
Options for Compliance With FAA Noise Rules**

This paper reviews the options and costs to bring 2, 3, and 4 engine airline airplane types not meeting FAR 36 noise certification requirements into compliance with the FAR 91 operating noise limit rules. Options considered are replacement with new FAR 36 airplanes, reengining, and retrofit of engines and nacelles with sound absorbent material.

Douglas DC9-30

The only airplanes currently available in this size range as quieter replacements for DC9's manufactured before December 1, 1973 are the DC9-80 and the recently announced DC9-80SF. The standard DC9-80 seats about 137 in a typical two class seating configuration; the DC9-80SF about 105 in a similar configuration. (A typical DC9-30 seats about 100 in a mixed configuration.) A new DC9-80 costs approximately 16 million in 1979 dollars (no spares or support equipment).

Reengining may be a possibility for the DC9-30. The engine used on the DC9-80 - the JT8D-209 - is a candidate. However, installation of the heavier JT8D-209 engine at the aft fuselage location would create aircraft

balance problems that may prove costly to resolve. We estimate that installation of the JT8D-209 on the DC9-30 would cost about 4 million 1979 dollars for each airplane, not including maintenance spares. Fuel efficiency would be improved about 15%. There would be no specific limit on the useful life of the modified airframe, although maintenance costs increase as an airplane ages.

Retrofit of a DC9 costs approximately \$250,000 per airplane. Fuel consumption increases about 0.3% due to increased weight. Again, there is no specific limit on the useful life of the aircraft.

Boeing B737

The replacement options for the B737 are the same as for the DC9.

There is no reengine option for the B737. All the quieter engines (JT8D-209, JT8D-217, CFM-56) are larger in diameter than the JT8D engines currently in use. Mounting larger diameter engines under the wings of the B737 would necessitate longer landing gear, which in turn would require redesign and restructure of the entire wing center section. Major redesign of this airplane is not economically realistic and has not been pursued to the point of a commercial offering by the manufacturer. Retrofit of the B737 costs about \$320,000 per airplane and increases fuel consumption about 0.3%.

Boeing B727-100 and -200

There are no replacement airplanes available in the size and payload range of the B727 family of airplanes other than the DC9-80 and DC9-80SF airplanes. However, the latter models cannot duplicate the entire payload and range capabilities of the B727-200. The B727-100 is no longer in production. The B757/B767 and the A300/A310 airplanes are much larger than the B727-200, seating about 177 for the B757, 208 for the B767, 245 for the A300, and 200 for the A310 (all in two class configuration). By contrast, a typical B727-200 two class configuration seats about 137. A new airplane of A300/B767 size costs approximately \$30 million.

The B727 airplanes cannot be reengined without major modification to the aft fuselage. Again, the larger diameter replacement engine poses a problem for the existing center engine position. No reengined version of the B727-200 is currently being offered by Boeing.

Retrofit of older B727 airplanes involves engine modification and may involve installation of sound absorbing material in the engine nacelle (the "quiet nacelle" treatment). Some models of the B727 only require the engine modifications in order to comply with the FAA operating noise rules. Cost of retrofit for the engine modifications only is approximately \$95,000 per airplane; for both engine modifications and quiet nacelle approximately

\$200,000. As is the case with the other airplane models, the retrofitted airplanes would suffer a fuel consumption penalty of about 0.3%, and the modified airplanes would not have a finite service life.

The Four Engine Situation

To complete the picture, mention should be made of the likely future of the DC-8 and B-707 family of airplanes. Substantial research has been done on alternative means to quiet these airplanes. Retrofit was examined and abandoned, since a substantial weight penalty and fuel efficiency penalty would be incurred for both airplanes. Reengining has also been examined in detail - using either the Pratt and Whitney JT8D-209 or the GE/SNECMA CFM-56 - and has not been found to be economically attractive, except for the DC8-61 series airplanes. Commitments have been made by at least 3 airlines to reengine DC8-61 airplanes with the CFM-56. United Airlines has estimated that this modification will improve the fuel efficiency of the airplane about 15-20% and add 10 years to the useful life they expect for the airplane. We understand that the cost of reengining one airplane, without spares, is approximately 10,000,000 1979 dollars. Airlines are still considering the wisdom of investing in reengining for the DC8-62 and 63 series airplanes. No final decisions have been made. We believe that no other DC-8 models and no B-707 models are likely candidates for reengining and that these airplanes will be retired by 1985.

Conclusion

The current compliance deadlines in the FAA's noise rules in FAR 91 are driving the airlines to seek the least cost solution for the 2 and 3 engine airplanes - retrofit. Retrofit also involves a fuel consumption penalty - about 1 million gallons per month for the non-complying 2 and 3 engine airplanes. Retrofit also increases maintenance costs - about 5 million dollars per year. Legislation introduced in the 95th Congress and S. 413 in the current session both contained new technology incentives and other measures intended to encourage investment in new technology airplanes - airplanes powered by the derivative JT8D-209 engine or even newer high bypass ratio engines that would provide meaningful noise relief and significant reductions in fuel consumption.

Investment in the retrofit solution for the 2 and 3 engine airplanes inevitably reduces cash flow available for investment in airplanes with improved source noise characteristics. Although new technology airplanes are not yet available to cover the complete payload/range spectrum needed by the airlines, the marketplace is reacting favorably. The Douglas Company has just recently announced the availability of the DC9-80SF. Other new developments will follow as demand develops. Unfortunately, retrofit of the current inventory of 2 and 3 engine airplanes will tend to delay that process.

Cost Summary for the Three OptionsReplacement Airplanes

DC-9-80	\$16,000,000
B-767	\$30,000,000
A-300	\$30,000,000

Reengine Current Airplanes

DC-8-61 (CFM-56)	\$10,000,000
DC-9-30 (JT8D-209)	\$ 4,000,000 (installation may prove impracticable)

Retrofit Current Airplanes

DC-9	\$250,000
B-737	\$320,000
B-727	\$ 95,000 - 200,000 depending on number of modifications required

Note: All costs are estimates for single airplanes, in 1979 dollars, with no allowance for maintenance spares or support equipment.

Noise Characteristics of Typical Airline Jet Aircraft

All values stated are in Effective Perceived Noise Decibels at the FAR 36 takeoff and approach noise measuring points, for maximum operating weights. Values for airplane and engine combinations not yet test flown are estimated, with an (E) after the airplane and engine type indicating estimated values.

1. B727-200, JT8D-9 engine, 172,500 lb. takeoff, 30° landing flap

	<u>Takeoff</u>	<u>Approach</u>
(a) FAR 36 requirement	99	104.4
(b) Untreated airplane	101.2	108.2
(c) Engine and nacelle treatment	99	100.3

2. B737-200, JT8D-7 engine, 103,500 lb. takeoff, 30° landing flap

	<u>Takeoff</u>	<u>Approach</u>
(a) FAR 36 requirement	95.3	102.9
(b) Untreated airplane	93	105.5
(c) Engine and nacelle treatment	93	99.1

3. DC-9-30, JT8D-7 engine, 108,000 lb. takeoff, 50° landing flap

	<u>Takeoff</u>	<u>Approach</u>
(a) FAR 36 requirement	95.6	103.1
(b) Untreated airplane	97.0	101.2
(c) Engine and nacelle treatment	95.2	97.2

4. DC9-80, JT8D-209 engine (E), 140,000 lb. takeoff

	<u>Takeoff</u>	<u>Approach</u>
(a) FAR 36 requirement	97.5	103.8
(b) New airplane	90.8	98.8

5. DC8-61, CFM-56 engine (E)

	<u>Takeoff</u>	<u>Approach</u>
(a) FAR 36 requirement (Stage 2)	103.6	106.2
(b) Untreated (JT3D-3B engine)	110	114.5
(c) Reengined (CFM-56)	94	101

Inventory of 2 and 3 Engine Aircraft Operated by
ATA Airlines as of December, 1978

Air California

1 B-737 9

Air Florida

DC-9-10 6

Air New England

DHC-6 11

FH-227B 2

Alaska Airlines

B-727-100 8

B-727-200 1

Allegheny

M-298 9

BAC-1-11-200 30

DC-9-31 45

B-727-100 7

Aloha Airlines

B-737-200 8

American Airlines

B-727-100 57

B-727-200 79

DC-10-10 28

Braniff International

B-727-100 21

B-727-200 64

Continental Airlines

B-727-100	13
B-727-200	36
DC-10-10	15

Delta Air Lines

DC-9-30	51
B-727-200	104
L-1011	24

Eastern Air Lines

DC-9-10	9
DC-9-30	58
DC-9-50	17
B-727-100	70
B-727-200	55
A-300-B4	6

Frontier Airlines

DHC-6	3
CV-580	27
B-737	32

Hawaiian Airlines

DC-9-51	9
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Hughes Airwest

F-27A	7
DC-9-10	10
DC-9-30	31
B-727-200	5

National Airlines

B-727-100	16
B-727-200	23
DC-10-10	11
DC-10-30	4

North Central Airlines

CV-580	23
DC-9-30	20
DC-9-50	16

Northwest Airlines

B-727-100	19
B-727-200	44
DC-10-40	22

Ozark Air Lines

FH-227B	13
DC-9-10	7
DC-9-30	25

Pan American World Airways

B-727-100	13
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Piedmont Airlines

YS-11	17
B-737	21
B-727-100	6

PSA-Pacific Southwest Airlines

B-727-100	6
B-727-200	24

Southern Airways

SA-226	8
DC-9-10	22
DC-9-30	8

Texas International Airlines

CV-600	3
DC-9-10	19
DC-9-30	7

Trans World Airlines

DC-9-10	14
B-727-100	35
B-727-200	39
L-1011	30

United Airlines

B-737	59
B-727-100	90
B-727-200	62
DC-10-10	37

Western Air Lines

B-737	22
B-727-200	33
DC-10-10	9

Wien Air Alaska

F-27/FH-227	3
B-737	7

Mr. MADIGAN. Thank you very much, Mr. Chairman.

Mr. FLORIO. Gentlemen, I would like to make an observation and ask one or two questions.

We are talking about a philosophic difference of opinion. You state a number, \$200 million, as being an amount of money that is certainly substantial, and your point, as I understand it, is that the benefit to be obtained from that \$200 million is not as substantial as you feel it could be in terms of a cost-benefit ratio.

I just wondered how you would respond to the suggestion from previous witnesses that there is a rather substantial reduction in the noise impact on those areas where these procedures and retrofitting have already taken place.

We have had witnesses from Minneapolis with regard to Northwest Orient and people from Boston with regard to Delta Airlines. The consensus of those witnesses was that people in those areas do notice a perceivable difference, and are very happy about it.

Likewise, there was a study that was called to my attention at Dulles, June 1978, where differences of only 3 to 5 decibels between retrofitted and nonretrofitted two-engine and three-engine aircraft were identified by over 80 percent of the listeners on the ground.

Some have emphasized the fact that the relatively small amounts of improvement are not identifiable nor are they that significant. I was wondering if anyone would care to respond to this point?

Mr. VON KANN. Yes, I would be glad to, Mr. Chairman, or try to.

On this last one you mentioned, at Dulles, I thought the number entered on the official report was 76 percent, which meant that the others apparently could not identify the difference.

The real point is that even if you could identify the difference under what were almost laboratory conditions—in other words, planes flying over with fairly close spacing—the question is, was it meaningful when because one might be a little less noisy than the other but would still probably have the same effect on one's television set or that sort of thing?

So I think there is a question—there is also a very serious question, from the noise monitoring tests which FAA has been running at Dulles and at National, whether there is even much difference in the decibel levels themselves.

I was not able to attend the other day, and I didn't hear the witnesses who testified on those local situations. Roger was here. Could you comment on that, Roger?

Mr. FLEMING. Before I comment on the testimony of several of the other witnesses, I would like to add a note about the Dulles flyover test that you referred to.

The test was designed by Mr. Richard Russell of the Boeing Co., their chief noise engineer, at the request of the FAA. In the takeoff portion of the test he used thrust values for two 727's that were absolutely the lowest that could be used for climb, with the lightest 727's, specifically, 1.43 engine pressure ratio, which is to take advantage of the feature of the sound absorbing material that I mentioned earlier in response to Mr. Madigan's question.

The object of the test in this case was to maximize the difference between the two 727's, and FAA insisted on this as a test design condition, which we agreed to in order to get the flyoff accomplished.

Mr. FLORIO. It seems to me that if you are trying to understand the difference, you would utilize the procedures which would minimize noise in conjunction with retrofitting. That does not skew the test in any way.

Mr. FLEMING. It does, in the sense that the thrust value could only be used for a very light 727, not representative the weights at which 727's operate in daily service. In that sense, we did not object because it was, in fact, the thrust value that would be used by Northwest Airlines for a very light 727. Most of the 727's are much heavier. As to the testimony of several of the other witnesses, I am afraid we get right to the heart of the matter of people's ability to discern small differences in noise values. Just this morning we heard a statement which I understood to be to the effect that the four-engine airplanes were less noisy than the two- or three-engine airplanes. Quite frankly, I do not see how that can be the case. All measurements of airplanes in airline service today show that the four-engine airplanes are noisier than two- and three-engine airplanes. It is a simple fact of life. At Boston Logan Airport before the current Massport rules went into effect, Delta Airlines operated a large number of DC-9-30's, some of which were older airplanes and did not comply with FAR 36. Because of the Massport rules, which encouraged FAR 36 airplanes, they substituted 727-200's, which comply with FAR 36 but make far more noise than the old DC-9-30's.

Therefore, I had difficulty with Ms. Thaler's statement that Delta airplanes were always quieter. I think these two discrepancies highlight the difficulty that lay people have in actually determining the amount of sound energy that they are perceiving. They can probably discern differences in quality of the noise quite easily, and this was evident at the Dulles flyover test where the retrofitted airplane had a different fan whine component, with much less high-frequency noise and thus less objectionable.

It is easier to recognize that difference in quality of noise than it is to recognize a small decibel difference in two noise levels.

Mr. FLORIO. Isn't that the most important consideration? We are not really holding everyone to standards of specialists; we are trying to determine what the impact is upon the general population, not to quiz them as to whether or not they understand the quality of what they are hearing.

Mr. FLEMING. I understand that, Mr. Chairman. My point is that people are very easily confused about the differences in sound level between individual airplane types. In fact, they sometimes think they are hearing something that is quieter but it is not.

As General von Kann indicated earlier, the differences that you would expect in the various fleets of airplanes operating at Washington National are not necessarily showing up in the monitoring data that the FAA is gathering and reporting monthly.

Mr. FLORIO. On page 4 of your testimony you state that no retrofit kits are committed to production for 4-engine aircraft. I understand Boeing has offered these kits, but that no airline has purchased them.

Mr. FLEMING. That is correct.

Mr. FLORIO. So they are available, but the aircraft industry has not seen fit to purchase them?

Mr. FLEMING. The retrofit kit for the 727 has been commercially offered. Of course, before the kit is committed to production, Boeing would require a number of customers. The 707 retrofit would add significantly to airplane weight and to fuel consumption. It is not an economical solution for that airplane type; that's the reason it has not been purchased.

Mr. FLORIO. Does it not highlight the need to get the aircraft manufacturers in here? We are hopeful we will have the benefit of their thoughts with regard to the impact of these kits, which they apparently feel are something that is marketable.

Mr. VON KANN. On those kits, Mr. Chairman, the general consensus is that it is very doubtful that the 707's will be retrofitted.

Mr. FLORIO. Why is that?

Mr. VON KANN. Because of the additional weight, additional maintenance cost; and it is almost certain, in my mind, that they will be replaced by the newer technology aircraft; the 707 is going down in numbers rather rapidly right now.

Mr. FLORIO. Replaced before 1985?

Mr. VON KANN. That would be my guess.

Mr. FLORIO. Then why would there be a need for waivers?

Mr. VON KANN. Well, the waivers that we are principally interested in are for the two- and three-engine aircraft.

Mr. FLORIO. Then you feel, in fact, that the industry will be able to replace 707's with new, quieter, high-technology aircraft before 1985 in accordance with the existing deadlines.

Mr. VON KANN. I would say in all but a few cases. There may be some cases where we have a few carriers who have large numbers and whether or not they are able to flush that number out by 1985 will depend on their economic fortunes.

I think the tendency will be for people to do everything they can to avoid retrofitting that aircraft, because the economics are not good. With the DC-8's, I think a large number of the stretched DC-8's will probably be reengined, because that seems to make more economic sense.

Mr. MADIGAN. I would just like to clarify one part of the conversation, about the test. We discussed in some detail the different takeoff procedures that you described as being used by Northwest and National, I believe. Did you say that the FAA in doing this noise analysis required that the retrofitted airplane be operated in that manner, using the noise abatement procedure?

Mr. FLEMING. Mr. Madigan, the second airline using a similar procedure to Northwest was North Central, also Minneapolis based.

The answer to your question is this. In order to avoid the need to land in between each of the successive flyovers, the test was designed so that the airplanes would fly approaching the measuring site level and at a specific altitude, then add thrust and climb so as to be over the measuring point at approximately the same altitude you would expect the airplane to be if you were conducting a FAR 36 test; therefore, we had to introduce some artificiality, but the thrust level selected for those tests was that that would have been used by Northwest Airlines at that very light airplane weight. Of course, in order to control the test conditions, both airplanes were flown at the same weight.

Mr. MADIGAN. So the retrofitted airplane was flown in the same manner as the airplane that had not been retrofitted?

Mr. FLEMING. Yes, sir.

Mr. MADIGAN. Thank you.

Mr. FLORIO. Gentlemen, we thank you very much for your help.

Mr. VON KANN. Thank you, Mr. Chairman.

Mr. FLORIO. Is Mr. Taylor here? If the other witnesses don't mind, I think it would be appropriate that we have Mr. Quentin Taylor of the Federal Aviation Administration testify at this point.

Mr. Taylor, we would like to welcome you to the committee.

We would ask you to introduce your colleagues for the record.

Your statement will be introduced in the record in its entirety. You may proceed.

STATEMENT OF QUENTIN S. C. TAYLOR, DEPUTY ADMINISTRATOR, FEDERAL AVIATION ADMINISTRATION, DEPARTMENT OF TRANSPORTATION, ACCOMPANIED BY JOHN E. WESLER, ACTING ASSOCIATE ADMINISTRATOR FOR POLICY AND INTERNATIONAL AFFAIRS; AND ALBERT B. RANDALL, CHIEF, LEGISLATIVE STAFF, OFFICE OF THE CHIEF COUNSEL

Mr. TAYLOR. Thank you, Mr. Chairman.

I am Quentin Taylor, Deputy Administrator of the FAA. On my right is John Wesler, Acting Associate Administrator for Policy and International Affairs. On my left is Bert Randall of our Chief Counsel's Office.

Mr. Chairman, thank you for the opportunity to appear before you today to discuss H.R. 3942, the proposed Aviation Safety and Noise Reduction Act, which is currently pending before your subcommittee. Since you have a copy of my full prepared statement for the record, I will briefly summarize some of our concerns about the pending legislation.

Briefly stated, our assessment of the legislation is that it is bad legislation, legislation that would serve narrow interests. We are strongly opposed to its enactment.

Titles I and II of the bill address land-use compatibility planning and authorize additional funding for this purpose from the airport and airway trust fund.

We are in general agreement with the concept of voluntary airport noise abatement and compatible land-use planning proposed in title I, and have worked to promote such activities in our proposed revisions to the Airport and Airway Development Act which expires next year.

I should point out that we strongly oppose the increased funding levels which would be provided by the bill. The President's 1980 budget contains adequate funding levels to meet all priority project needs of the system.

We believe that the Congress should consider the issues and funding levels raised by titles I and II of the proposed legislation when it undertakes, in the near future, a legislative review of our proposal to revise the Airport and Airway Development Act.

Title III of the bill would severely affect the FAA's regulatory authorities in dealing with environmental matters. Portions of the bill would undercut the FAA's ability to control aviation noise as we are mandated to do by the Federal Aviation Act, as amended by the Noise Control Act of 1972 and the Quiet Communities Act of 1978, by directing certain regulatory actions and by restricting other actions.

Section 302 directs the Secretary of Transportation to impose noise standards on aircraft operated in foreign air transportation. We have stated repeatedly in the past that we intend to take regulatory action in this area if appropriate international agreement could not be reached. Apart from the fact that the section is unnecessary in light of our expressed regulatory commitment, there are undesirably restrictive features of the section.

For one thing, the wording of the section would cover all aircraft operated by air carriers in foreign air transportation, whereas, our noise compliance regulation covers only subsonic turbojet-powered aircraft over 75,000 pounds maximum certificated gross weight.

Further, the section would require phased compliance with the noise regulations in the same manner as required for our domestic operators. We believe this could be extremely difficult, or perhaps even impossible, for some foreign operators to meet.

Simply put, it is our view that the regulatory process can best meet the objectives of the section after an opportunity has been provided for full public participation and comment.

Section 303 would have the effect of prohibiting us from issuing any noise regulations more stringent than those in effect for approximately a 1½ year period. This would severely limit our authority under Section 611 of the Federal Aviation Act of 1958 to combat aircraft noise.

In fact, the section as written would prohibit us from any type of aircraft noise regulation, such as the noise standards we are about to propose for helicopters.

In addition to these objectionable features of the section, the section provides for a one-house legislative veto over proposed noise regulations. Legislative vetoes are highly objectionable to us. The President and the Attorney General have stated that legislative vetoes are unconstitutional restrictions on the executive branch's duty to execute the laws and the President's role in the legislative process. We believe our rulemaking activities should be redirected by the Congress only through a statute or joint resolution.

Section 305 would permit noisy two- and three-engine aircraft to continue operating indefinitely so long as they primarily serve medium and small hub airports. We strongly oppose this weakening of our noise regulations. This section, if adopted by the Congress, would permit these noisy aircraft to operate up to 40 percent of the time into major hubs where serious noise problems are currently being experienced.

The section would also be a nightmare to monitor and enforce because compliance is based on the scheduling of individual aircraft and not on an operator's entire fleet.

Section 306 would prevent us from issuing any further noise retrofit requirement for 10 years, but if enacted it would also have the apparently unintended effect of hampering our authority to enforce aircraft engine air emissions standards pursuant to the Clean Air Act. The section is unnecessary, since we have stated that we do not foresee any further requirement for noise retrofit of existing aircraft once our 1976 regulation is adopted. Further, it is unduly restrictive.

Section 308 would apparently shift some of the liability for noise damages from State and local governments to the Federal Government. We strongly oppose this shift in liability. We see no justification for subjecting the Federal Treasury to liability for noise damages, and strongly believe that the proper way to deal with noise problems is not to shift the liability but to reduce the harmful effects of noise at the source and through effective land-use planning.

Title V of the bill is outside the purview of the subcommittee, but nevertheless merits mention just to demonstrate how unacceptable the entire bill is to us.

This title would have the effect of overturning a safety rulemaking effort of the FAA before the final rules have been promulgated by the FAA. It is a bad precedent which could have far reaching adverse effects in the future.

I should add that a number of the members of the Public Works Committee objected to this kind of a precedent in the committee's report on the bill, including at least one member who, while agreeing with the amendment's supporters that our proposed regulations are not desirable, nevertheless objected to the dangerous precedent

it would establish for congressional intervention in the FAA's safety rulemaking activities.

In short, Mr. Chairman, the legislation pending before you is unacceptable to us for a variety of reasons. It prematurely calls for noise planning measures and funding levels which should be addressed later by the Congress during the review of our proposed airport and airway legislation. It hampers the ability of the Federal Government to effectively fight aviation noise; and it establishes a harmful precedent for future congressional intervention in the rulemaking process.

We ask your support in working to defeat this legislation and in helping us to enforce our current noise compliance regulations for the benefit of millions of noise-impacted Americans.

We will be pleased to answer any questions you may have at this time, Mr. Chairman.

[Testimony resumes on p. 214.]

[Mr. Taylor's prepared statement follows:]

STATEMENT OF THE HONORABLE QUENTIN S. C. TAYLOR, DEPUTY ADMINISTRATOR OF THE FEDERAL AVIATION ADMINISTRATION, BEFORE THE HOUSE COMMITTEE ON INTERSTATE AND FOREIGN COMMERCE, SUBCOMMITTEE ON TRANSPORTATION AND COMMERCE, CONCERNING THE AVIATION SAFETY AND NOISE REDUCTION ACT. JUNE 12, 1979.

Mr. Chairman and Members of the Subcommittee:

I welcome the opportunity to appear before you today to discuss H.R. 3942, the proposed Aviation Safety and Noise Reduction Act, which is currently pending before your Subcommittee.

I believe it is important for this Subcommittee to carefully review this proposed legislation because in our view H.R. 3942, as recently reported out of the Public Works and Transportation Committee, is unacceptable, and we oppose its enactment.

Titles I and II are premature, insofar as they would authorize increased funding levels for noise planning and airport aid projects; they propose concepts and funding levels which should be considered by the Congress as part of the pending review of the Airport and Airway Development Act. Title III would adversely affect current FAA noise control regulations and limit our authority to issue future noise regulations. And,

Title V would severely inhibit the FAA in taking future actions to improve air safety. Let me examine each of these criticisms in more detail. First, though, I would like to briefly provide you with some of the background of the Department's efforts to reduce aircraft noise.

The problems of excessive aircraft noise plague literally millions of people near our airports today, and present a formidable challenge to all of us in the aviation community. Aircraft noise is by no means a new problem, having been with us largely since the advent of the jet age in the late 1950s. The problems have grown significantly with the passage of time due to steadily increasing levels of aircraft operation, new and expanded airport facilities, and, in many cases, increasing residential development around airports. Recent increases in aircraft activity have further compounded the problems experienced with aircraft noise, and it is clear that activity levels will continue to increase as the beneficial aspects of the Airline Deregulation Act of 1978 become more evident in this country at small and large communities.

We cannot be satisfied with our efforts to date in controlling aircraft noise, and we must continue to take positive actions to alleviate further this adverse impact on our quality of life.

The Department of Transportation has long recognized the need to reduce all aspects of transportation noise, particularly aviation noise, and has worked diligently to do just that. Without belaboring past history, I believe it is worthwhile to recall briefly some of the actions we have already taken in this respect.

As you know, the Congress first gave us authority to control aircraft noise and sonic boom in 1968, through an amendment to the Federal Aviation Act of 1958. We acted quickly to impose strict noise standards for new design jet airplanes in 1969 with the initial issuance of Federal Aviation Regulations, Part 36. Our amendments over the ensuing ten years reflect a deliberate but progressive program to expand the scope of aviation noise controls and to increase their stringency as technology allowed us to do so. Thus, for example, the original noise standards were expanded in 1973 to apply to new

domestic production of older design airplanes such as the 707s, 727s, DC-8s, DC-9s, and 737s.

In 1976, we extended the noise standards to all large subsonic turbojet airplanes, including those built before 1973, as a condition for operation in this country. In 1977, we increased the stringency of the noise limits for the next generation of aircraft, such as the 757s and 767s, which we refer to as Stage 3 aircraft.

Along the way, we have acted in other areas of aviation noise by specifying noise limits for new-design and new-production small propeller-driven airplanes, by prohibiting sonic booms over our country from civil aircraft, by requiring and encouraging safe operational procedures which reduce noise impacts, and by extending subsonic noise limits to supersonic aircraft. I believe this program represents an effective Federal role in limiting aviation noise impacts. But, we recognize that our regulations have not "solved" the aviation noise problem. Regulation of aircraft noise alone will never completely eliminate noise problems, because aircraft, even the

quieter new technology types, will always make some noise because of the nature of their propulsion system and their movement through the air. Safe noise abatement operation procedures and effective land use around airports can and do help, and must complement noise reduction at the source if we are to reduce the undesirable effects of aviation noise.

Though our regulations are not a panacea for the noise problem, I would like to emphasize our strong commitment to the noise regulations which we issued in December 1976. We believed at the time they were issued that they represented a balanced approach to reducing exposure of millions of Americans to aircraft noise while imposing reasonable requirements upon the airlines. We retain that belief today. In fact, one of the specific findings we had to make when we issued the regulations was that they were economically reasonable. That finding was supported by the facts. Contrasting our findings in 1976 with the situation of today--1979--it is apparent that the regulations are eminently more reasonable from an economic perspective at the present time than they were when issued. Last year, the U.S. scheduled airlines alone reported profits over one billion dollars. And, I would reemphasize our

regulations were found to be economically reasonable when they were issued. Therefore, any notion that the airlines are in need of relief from the regulations seems to me to be misplaced. The burden of retrofitting an airplane is just not that great, particularly for the two and three-engine aircraft for which the costs vary from \$200,000 to \$300,000.

While I maintain that the cost of complying with our noise regulations is not that substantial, the failure to proceed with these regulations on a timely basis would result in substantial cost. Decreasing property values, the liability of airport proprietors for monetary damages, continuing delay in obtaining needed airport improvements--these are "pocketbook" issues which result directly from noise. Focusing on cost alone ignores, of course, the noise relief which would be offered by compliance with our noise rules to millions of people nationwide. FAA studies show compliance with our regulations will remove approximately one-third of the estimated six million airport neighbors from unacceptable noise exposure levels, and will provide significant reductions in noise exposure for those who remain within impacted areas.

We recognize that these rules are not perfect and that is exactly why we recently proposed a further amendment to them. Specifically, we have proposed the inclusion of "re-engining" within our definition of replacement aircraft so that approved replacement plans can incorporate in them the re-engining of aircraft to meet Stage 3 noise limits as an acceptable alternative to replacement of the entire aircraft. Further we propose to require plans from the airlines to show how they intend to achieve compliance with our noise rules. I might add that we are already aware of the plans of several of the carriers, and we are gratified by the commitment to noise reduction they have demonstrated. For example, Delta Air Lines has announced that it has ordered retrofit kits for its fleet of 44 DC-9s, and Continental Air Lines has announced that it will retrofit 44 of its 727s, to bring its entire fleet into compliance.

A review of compliance plans and further discussions with manufacturers of retrofit kits will enable us to better project whether the supply of such kits will be timely to meet the demand. This in turn will enable us to assess in an informed

manner whether waivers of our compliance deadlines may subsequently be warranted in the public interest for certain operators. We are certainly not encouraging requests for exemption from our regulations, but we believe it should be made clear that we intend to be reasonable in the application of these regulations.

Another point I would like to make concerns all the discussion of encouraging the purchase of new technology aircraft. We fully agree that new technology aircraft offer substantial benefits both in terms of noise reductions and fuel efficiency. That, of course, is why we structured our noise regulations to permit waivers of interim compliance deadlines if replacement aircraft are purchased. On the other hand, retrofit offers meaningful benefits, too, in terms of noise relief. Our compliance regulation was carefully formulated to require use of available, demonstrated noise reduction technology to achieve significant noise abatement. It has been suggested that some models of the smaller two- and three-engine aircraft are only slightly over the required noise standards, so that meeting the standards will achieve little actual noise reduction. This is incorrect. Retrofitting of those aircraft will provide meaningful noise reductions--as much as eight

decibels at locations under the approach paths. We have measured these reductions in actual operations at U.S. airports, and the application of this demonstrated retrofit technology will bring most models below our noise limits with meaningful noise relief provided to airport neighbors.

I would like to turn now to the bill under consideration by your Subcommittee: H.R. 3942. Titles I and II address land-use compatibility planning and authorize additional funding for this purpose from the Airport and Airway Trust Fund. We are in general agreement with the concept of voluntary airport noise abatement and compatible land-use planning proposed in Title I, and we consider this consistent with our own programs and policies in this area. We recognize that much work needs to be done by airport proprietors and local governments in protecting the public health and welfare of airport neighbors, and have promoted such activities in our airport and airway legislative proposal, in a manner which is consistent both with overall aviation and anti-inflation policies.

We are strongly opposed to the increased funding levels. The President's 1980 Budget contains adequate funding levels to meet all priority project needs in both the airport grants and facilities and equipment areas. At this time, when we should be exercising fiscal constraint, we believe that arbitrary increases in spending levels could work against the Administration's efforts to fight inflation. We also believe that it is premature for the Congress to act in this regard, pending a comprehensive review and revision of the Airport and Airway Development Act which expires next year. We believe that expanded funding levels should be considered as part of your overall legislative review of our proposed legislation.

As I stated a moment ago, we believe Titles I and II should be considered as part of the Congress' legislative review of the Airport and Airway Development Act. At that time, the Administration's proposals which deal with noise planning can be carefully assessed and levels of funding taken into consideration. Though we believe that noise planning efforts

should be strengthened, there are features, apart from the funding levels, which make Titles I and II objectionable. For example, Sections 106 and 107 prohibit the use of noise exposure maps in legal proceedings--whether Federal or state--and restrict a person's right to bring suit in Federal or state courts for damages resulting from noise. We believe the public should have the right to use technical data concerning noise exposure in legal proceedings. Beyond that, the issue of restricting suits in state courts should be left to the states and, in our view, is not properly the subject of Federal legislation.

Sections 206-211 are also objectionable. They specify a number of projects to be undertaken at specific airports. These projects have been added arbitrarily to the pending legislation without regard to the merit of the projects vis-a-vis other projects which could be undertaken. We oppose the arbitrary funding of projects without an examination of their relative priorities in the context of the needs of the total air transportation system.

Another example of a provision we do not favor is Section 212 which would direct the Secretary of Transportation to study the health aspects of noise. There have already been a number of studies performed and, in our view, we have reservations about the merits of funding additional studies. Notwithstanding that concern, we do not possess the expertise in the Department to conduct such a study and, in that respect, the section is misdirected.

Title III of H.R. 3942 would severely affect the FAA's regulatory authorities in dealing with environmental matters. Portions of this bill would undercut the FAA's ability to control aviation noise as we are mandated to do by the Federal Aviation Act, as amended by the Noise Control Act of 1972 and the Quiet Communities Act of 1978, by directing certain regulatory actions and by restricting other actions. Let me explain.

Section 302 directs the Secretary of Transportation to impose noise standards on aircraft operated in foreign air transportation. As we have said in the past, we intend to initiate rulemaking on this subject if satisfactory international agreement on this point has not been reached by

1980. In that respect, I should point out that the ICAO Council has recently acted on the subject of international noise compliance, recommending that such compliance not be required before January 1, 1988, and then only at those airports which are designated as having a noise problem. We currently plan to propose regulations which will include international operations in our present noise compliance regulations, with a deadline of January 1, 1985.

There are a number of problems with Section 302. The wording contained in Section 302 is undesirably restrictive, requiring all aircraft operated by air carriers to comply with our domestic regulation at the same phased rate of compliance. This wording in part goes beyond our domestic regulation, which requires compliance only by subsonic turbojet-powered aircraft over 75,000 pounds maximum certificated gross weight. In part, the wording does not go as far as our domestic regulation, since it only applies to air carrier operations, and not to commercial operators and others who do not engage in common carriage. Finally, it may not be reasonable to require international operators to meet the same phased timetable as

our domestic operators. The international operators will have one year or less until the first interim deadline, and compliance with such a deadline may be neither reasonable nor even possible in certain cases. We believe that the regulatory process provides a more flexible forum in which detailed provisions may be assessed after a full opportunity for public comment. In addition, we believe that this provision is unduly restrictive of the Executive's flexibility and responsibility to negotiate an internationally acceptable solution which is also compatible with U.S. domestic standards. For these reasons, we recommend that such a requirement not be legislated by the Congress, and that our rulemaking processes be permitted to address this issue.

Section 303 directs the Secretary to study the feasibility of extending the more stringent, Stage 3 noise standards to newly-produced aircraft of older designs, in the same manner that Stage 2 noise standards were extended to newly-produced aircraft in 1973. Subsections (b) and (c) would then prohibit the issuance of noise regulations more stringent than those currently in effect for 180 days after the findings of

subsection (a) are reported to the Congress, and would permit a one-House Congressional veto of noise standards proposed thereafter. We find these provisions especially objectionable. First, these provisions effectively limit the authority of the Secretary under Section 611 of the Federal Aviation Act by imposing further constraints on noise control rulemaking. Secondly, although perhaps not intended by the drafters of this section, these provisions would prohibit us from any other type of aircraft noise regulation, such as the noise standards which we are about to propose for helicopters, for approximately 1-1/2 years after the bill's enactment. We believe these restrictions are unnecessarily broad in scope, and unduly restrictive to the authority of the Secretary in carrying out the policy mandates of the Noise Control Act of 1972. Beyond that, the President and the Attorney General have stated that legislative vetoes are unconstitutional restrictions on the Executive Branch's duty to execute the laws and the President's role in the legislative process. The Congress, for a number of reasons, has delegated rulemaking authority to the FAA and this authority should remain within the purview of the FAA subject to the redirection of Congress expressed in a joint resolution or by statute.

Section 305 would exempt 727s, 737s, DC-9s, and BAC-111s from the noise compliance regulations, if the airplanes serve primarily medium and small hub airports. We believe that enforcement of this would be extremely difficult since it depends on an individual airplane's scheduling, and would require submission and review of a great deal of information. This section would attempt to ensure that medium and smaller airports will be served by the older, noiser aircraft, but, in so doing, these noisy aircraft could still operate up to 40% of the time into major hubs; major hubs being of course where serious noise problems are currently being experienced. Because this provision weakens our noise compliance regulations, and would be a nightmare to enforce (for example, different aircraft are frequently routed between city pairs using the same daily flight number), we strongly urge that Section 305 not be enacted.

Section 306 may be the biggest "sleeper" in the proposed legislation. This restriction could extend beyond its intended purpose of preventing any further noise retrofit requirement for ten years, and could also negatively affect the FAA's authority to enforce aircraft engine air emissions standards

established by the Environmental Protection Agency. We have stated that we do not foresee any further requirement for noise retrofit of existing aircraft once our 1976 regulation is implemented, since the technology which might permit that requirement is not presently available. Therefore, we feel that this provision is not only unnecessary but unduly restrictive, and we oppose its enactment.

Section 308 is also quite troublesome to us. Although the full effect of the section is not clear to us, it is apparently an attempt to shift some of the liability for noise damages from state and local governments to the Federal Government. Though we are unable to quantify the amount of damages to which the Federal Government would be exposed, we strongly oppose such a shift in liability. We see no justification for subjecting the Federal treasury to liability for noise damages. The proper way to deal with the noise problem is not to apply the "deep pocket" theory but to reduce the harmful effects of noise through regulation at the source and through effective land-use planning.

Recognizing that Title V of the bill is not really within the jurisdiction of the Subcommittee, I nevertheless would like to briefly discuss it so that you can get a feel for just how pervasive the objectionable features of the bill are. Many of you are probably aware of the FAA's recent rulemaking proposals to provide greater control over the navigable airspace to reduce the threat of midair collisions. This rulemaking activity has resulted in a significant number of objections, primarily from the general aviation community. Because of these concerns, we appeared before the House Subcommittee on Aviation on the proposal and Administrator Bond clearly indicated at that time that the airspace actions under consideration were merely proposals which would be reviewed and revised in the context of the substantial public comments received. Further, he expressed the view that the needs and desires of the general aviation community would receive careful attention. Nevertheless, an amendment was added to H.R. 3942 to preempt this rulemaking. That amendment, Title V, would overturn by statute the FAA's present rulemaking activities before a final proposal has even been generated by the FAA. We believe this would be a most unfortunate precedent for the Congress to intercede in the midst of a safety rulemaking

process before a final rule, reflecting substantial public comment, has been developed. Let me quote from the dissenting views of Representatives Mineta, Levitas, Ferraro, and Gingrich on this aspect of the legislation:

"(A)n amendment was accepted which places a virtual prohibition on the FAA's ability to add new requirements for air traffic control procedures. Although we may not all agree with the air space proposals recommended by FAA recently, any attempt to prohibit FAA from implementing any flight rule changes is a substantial threat to aviation safety. In addition, the FAA has not even come up with a final proposal on their new air space rules. There has been a tremendous outpouring of public comment submitted to the FAA that is still under consideration. The FAA Administrator has said in testimony that the public comment will be taken into account when the final version of the rules is written. It is premature, on a matter of safety, to deprive the agency with jurisdiction over air safety of the opportunity of even offering regulations after public comment has been solicited."

Similar views were expressed by Chairman Anderson and Representative Goldwater. I think it's important to note that Mr. Goldwater expressed opposition to the amendment as a "dangerous" precedent despite the fact that he agreed "with the amendment's supporters that FAA's proposed rules in this regard will most probably be ineffective in improving the safety of air travel and will be unnecessarily harmful to general aviation".

Mr. Chairman, we urge the Members of this Subcommittee to assist us in our efforts to proceed with our aircraft noise reduction regulation as it currently stands, with the refinements we are proposing, and we seek your help in allowing us to enforce compliance with the regulation. We issued the regulation in December 1976, believing it to be the best available approach for achieving meaningful noise abatement for the citizens of this country without imposing an unreasonable burden on our air transportation system. We believe the regulation still represents the best balancing of those factors. With your support we can make it work.

In sum, for the reasons we have set forth above, we find H.R. 3942 unacceptable and strongly oppose its enactment.

That completes my prepared statement, Mr. Chairman. We will, of course, be pleased to respond to questions you or Members of the Subcommittee may have.

Mr. FLORIO. Thank you very much. Mr. Madigan?

Mr. MADIGAN. Mr. Taylor, we have some different figures on what it would cost or what the total cost would be to do the different things that are being contemplated here.

Can you tell us what the FAA thinks it would cost to retrofit all of the two- and three-engine aircraft of the domestic air carrier fleet?

Mr. TAYLOR. I will have Mr. Wesler respond in detail.

Our current estimates are approximately \$200,000, perhaps \$250,000, per unit. That is per aircraft.

Mr. WESLER. You heard this morning several estimates, all the way from \$200 million to \$350 million. We have been somewhat pessimistic in making our estimate in order to shed the best light on the benefit-cost analysis which we have done.

I would estimate at the present time the two- and three-engine aircraft retrofit cost would be on the order of \$250 million.

Mr. MADIGAN. What is the cost to re-engine an airplane?

Mr. TAYLOR. The difficulty with re-engining those particular aircraft is the unavailability of suitable engines of new technology design which would fit those smaller aircraft. The re-engining is most applicable for 707's, DC-8's, four-engine narrow-body aircraft. They will be using the CFM 56 engine, a joint development by the General Electric and SNECMA of France. This is a fairly high-thrust engine somewhat higher in thrust than would be appropriate to replace the two engines on the DC-9 or the 737, for example.

Mr. MADIGAN. So that option, in your judgment, is not economically available to the carrier?

Mr. TAYLOR. In our discussions with the airframe manufacturers and with the engine manufacturers, it would not be a suitable replacement. We know that Boeing, for example, analyzed very thoroughly the re-engining for their 737 and 727 models. They have looked not only at the CFM 56 which I mentioned but also Pratt Whitney's so-called refan version of their JT8D-209. Boeing, in fact, offered re-engined versions of the 727 to the airlines at one time and were unable to find customers.

Mr. MADIGAN. Do you agree with the earlier testimony that there is a difference between the takeoff noise and the landing noise, and that there actually are two different kinds of noise, and one is more favorably controlled by retrofitting than the other?

Mr. TAYLOR. Basically, that is true, sir. There are two basic sources of noise from aircraft engines, that is, of the exhaust rumble, low-frequency noise, which is most prevalent while the engines are at high thrust. The second source of noise is the interior noise source, the whine coming from the compressors and combustion noise of the actual burning of fuel within the engine.

These are at a lesser level but are more prevalent during low-thrust operations such as during approach or during the cutback of takeoff.

The interior-type noises—whine, internal combustion noises—are rather effectively reduced by the nacelle treatment; therefore, the retrofit treatment is more effective during the approach phase.

Mr. MADIGAN. Is it also fair to say that from a nuisance standpoint the noise of a jet engine on an approach is less offensive to

someone inside a building than the noise of a jet engine under thrust during takeoff?

Mr. TAYLOR. That depends upon a number of factors, sir. Certainly, most buildings are susceptible to vibration due to the lower frequency or the lower rumbling type of noise; however, the high frequency whine or high pitched squeal, if you will, of approaching aircraft is extremely annoying to people.

Mr. MADIGAN. Inside a building?

Mr. TAYLOR. It is obviously attenuated, as all noise is, by a building with windows closed. To a lesser extent with the windows open, of course, it is still perceptible and annoying to people inside buildings.

Mr. MADIGAN. Is it less annoying than the takeoff noise?

Mr. TAYLOR. That is difficult to say, sir. It depends on the amount of noise that is imposed on a person, his relative sensitivity, I guess, to the different types of noise. It is difficult to answer, sir.

Mr. MADIGAN. I stay in a motel that is adjacent to an airport that is used by a DC-9 aircraft until the last flight at 11:08 at night. The planes landing do not wake me up. The planes taking off do wake me up. Is my experience a typical experience, one that you might experience?

Mr. TAYLOR. I believe that is probably quite typical; yes, sir.

Mr. MADIGAN. The noise most offensive to me, and most likely to wake me up, is the noise that would be the least controlled by retrofitting these airplanes?

Mr. TAYLOR. If that is the takeoff noise, that is correct, sir.

Mr. MADIGAN. Thank you very much.

Mr. FLORIO. Just to amplify on Mr. Madigan's point, and the other point made by previous witnesses, is that the takeoff part of the trip can be quieter with the use of both new procedures and retrofitting now implemented by certain airlines. Will this increase the ability to abate noise, permitting Mr. Madigan to be more comfortable in his motel room?

Mr. TAYLOR. I will say he will be more comfortable with a retrofitted aircraft taking off than without a retrofitted aircraft taking off; yes, sir.

Mr. FLORIO. Before we go into Mr. Madigan's hotel experience, would the new procedures and retrofitting diminish the noise even more?

Mr. TAYLOR. Certainly retrofitting in combination with reduced thrust at takeoff. The new procedure to which you refer will have a greater effect, yes, sir.

Mr. FLORIO. We will adjourn for a few moments so that we may go vote.

[Brief recess.]

Mr. FLORIO. The subcommittee will reconvene.

Mr. Madigan, you were asking questions?

Mr. MADIGAN. Yes. I would like to ask one more question about the takeoff noise.

The motel where I am staying is about 3 miles from the airport. As I understand the noise abatement procedure, it is something that occurs when the airplane has reached an altitude of 1,000 feet; is that correct?

Mr. WESLER. That is correct.

Mr. MADIGAN. So from ground zero to 1,000 feet, noise is going to be the same; is that correct?

Mr. WESLER. That is correct, sir. The operating mode is identical to altitude of 1,000 feet.

Mr. MADIGAN. So, if I am within the radius of that airfield, that would be represented by that aircraft in flight up to an altitude of 1,000 feet, the noise that I hear, the noise nuisance that I experience is going to be the same, because the procedure is not any different until the airplane is at 1,000 feet?

Mr. WESLER. The procedure would have no effect; yes, sir.

Mr. MADIGAN. What radius would that represent?

Mr. WESLER. I don't know, sir. I would have to go back and check the operating performance characteristics of the DC-9, for example. I am not certain at what distance after liftoff it will have achieved 1,000 feet. That is the question you are asking?

Mr. MADIGAN. Could we make a reasonable estimate? Might it be 5 miles, 10 miles?

Mr. WESLER. From the end of the runway it would probably be on the order of 2 miles.

Mr. MADIGAN. So that by your estimate, the people living within 2 miles of the end of the runway would not notice any difference in the noise from that airplane at all?

Mr. WESLER. Due to the operational procedure, that is correct, sir.

Mr. MADIGAN. Earlier we established that the retrofitting has less impact on the plane taking off than it does on the plane landing?

Mr. WESLER. That is correct.

Mr. MADIGAN. So, with the combination of the retrofitting and the takeoff procedure, for people within a radius of 2 miles of the end of that runway, they would experience very little difference in nuisance from the noise of the airplane?

Mr. WESLER. That is correct, sir.

Mr. MADIGAN. Thank you.

Mr. FLORIO. One of the points that one of the previous witnesses made is that he was somewhat apprehensive about retrofitting in accordance with the proposed timetable because he was concerned about prospective changes that the FAA may be considering, or may become involved with.

My understanding is that there has only been one retrofit requirement since 1976, modification in regulations. Do you propose to have retrofit requirement modifications from the existing requirements?

Mr. WESLER. No, sir; we do not.

Mr. FLORIO. Therefore, anyone's apprehension about complying with the existing regulations because there may be some further changes pending is not founded on fact?

Mr. WESLER. We do not foresee any further retrofit requirement. We do not see that primarily based on the fact that technology is not available to require any further retrofitting.

Mr. FLORIO. The comments about the good results of the changes that have been made by some of the airlines, that is, Delta and Northwest Orient, I believe, in the two locations—Minneapolis and

Boston—have you become involved in any way in monitoring or evaluating the results of those changes?

Mr. WESLER. Only in respect to the number of complaints and the comments which we received.

Mr. FLORIO. What was the nature of the comments and what has been the situation with regard to complaints being reduced or increased?

Mr. WESLER. Complaints at Boston have increased considerably, for another reason, recently, Mr. Chairman.

Mr. FLORIO. What is the reason?

Mr. WESLER. The other reason has to do with the takeoff procedures, which have been experimented with from runway 22R at Boston's Logan International Airport. The Massachusetts Port Authority in concert with the FAA has been attempting to find a less impacting flight track for those aircraft taking off from runway 22 right. As a consequence of that, they have overflowed areas of south Boston and farther south of Boston, Quincy, et cetera, which had not been overflowed before. As a consequence of that, the number of complaints recently has increased considerably at Boston.

Mr. FLORIO. That deals then with different approaches, rather than—

Mr. WESLER. Different flight tracks.

Mr. FLORIO. What we heard about the other day was different coalitions for different runways and the argument that by shifting the noise around one is not really dealing with reducing noise, one is just giving somebody else the benefit of the noise.

Mr. WESLER. In a sense, we are spreading the wealth; yes, sir.

Mr. FLORIO. With regard to the Minneapolis experience, where that is apparently not taking place, is there any controlled situation that you can evaluate as to what the impact was like before the retrofitting took place, and what it is like after?

Mr. WESLER. The evaluation there, at least on my part, sir, is entirely subjective. We know several years ago there was a great deal of resentment against the airport, a great deal of complaints against the airport. Through a number of beneficial actions and local—I hate to use the term—public relations kinds of cooperation, the general reaction against the airport there has diminished considerably. This was a combination of other things, sir, and I really can't fraction it out.

Mr. FLORIO. Some of the prior witnesses stated that retrofitting two- and three-engine planes will, in fact, increase fuel consumption. Is that correct?

Mr. WESLER. I do not believe that is correct, sir. Mr. Ginther mentioned specifically the BAC-111. There are 30 BAC-111's in Allegheny's fleet, I believe. There will be increased fuel consumption from retrofitting of the BAC-111's. I understood, particularly in the testimony Boeing provided Mr. Anderson's subcommittee in April, that there was no change in the operating characteristics of the 727 or the 737 as a result of retrofitting.

Mr. FLORIO. One of the things Mr. Madigan and I have had some difficulty understanding is the difference in the impact of these modifications on different types of airlines. If we talk about a cost of \$200 million to \$250 million being imposed upon the entire airline industry, the assumption being that the bigger carriers will

have more airplanes and, therefore, will foot the biggest proportion of the bill. Have you attempted to ascertain what the impact of retrofitting costs would be in a way other than evaluating across the industry?

Mr. WESLER. Yes, sir, when we issued this compliance regulation in December 1976. Preliminary to that issuance we did a number of analyses, including a financial analysis of the industry and airline-by-airline financial situation. The average cost of retrofitting the entire fleet—and that included not only the two- and three-engine aircraft but also the four-engine aircraft—to be as pessimistic as we could, was less than one-half of 1 percent of their revenues. The worst airline impact was 1.9 percent of its revenue, the cost of its retrofit versus its revenue.

Mr. FLORIO. That is interesting. We would like the benefit of those studies, particularly the airline-by-airline breakdown.

Mr. WESLER. We will be pleased to provide that for the record, sir.

Mr. FLORIO. That will be very helpful to us.

[Testimony resumes on p. 224.]

[The following material was received for the record:]

Fare/Waybill Adjustments Due to FAR 36 ComplianceSection I Conclusions

This paper examines one alternative to the financing question of FAR 36 compliance through 100 percent modification. The effect of adjusting air fares and cargo waybills to cover the cost of modification was studied. Only revenue generating aircraft are examined here. Thus, General Aviation aircraft impacted by the FAR 36 compliance are not treated by this analysis. The results are based upon the composite of the cash flows through each of the years of the compliance regulation scheduled, January 1, 1977, to January 1, 1985. Table 1 presents results for each U.S. air carrier. Major conclusions are given below:

The effect on all carriers over the time period January 1, 1977, to January 1, 1985, will be an average increase in revenues of approximately .5 percent with a range from negligible to 1.9 percent.

The domestic trunk carriers which will account for a large bulk of the cost of modification will require fare adjustments in the range of .2 percent to .7 percent.

The international trunk carriers, Pan American and Trans World, which will modify the large majority of their fleets on the international compliance schedule (assumed start date of 1/1/80) will have a fare impact of .6 percent.

The maximum impact upon any revenue producing air carrier will be incurred by an all cargo carrier (Airlift International) and an intrastate carrier (Pacific Southwest). These airlines will require increases in air fare and/or waybills of 1.9 percent over the eight-year period to cover the expenditures due to 100 percent modification.

A sensitivity study was also conducted to test what changes in domestic passenger enplanements and domestic enplaned cargo tons can be expected to evolve from increases in fares and waybills predicted by this analysis. Increase in ticket prices and freight rate of .5 percent (the average) and 2 percent (the maximum) will result in; a practically unnoticed change in passenger traffic; and, a drop in enplaned tons by .1 percent for the average waybill increase; and .6 percent for the maximum waybill increase. For example, in the year 1984, the forecasted passenger enplanements would remain the same with or without a retrofit related fare increase, and the amount of domestic air cargo would decrease in the worst case by approximately 30,000 tons from a total domestic market of 5.2 million tons. The details are presented in Section II.

The findings represented herein are based on several specific assumptions, one of which is the absence of attrition in the aircraft fleet. Each air carrier's modification candidates are those that existed in the fleet as of December 31, 1975. This is the most conservative approach and differs from analyses of benefits/costs contained in the Environmental Impact Statement. In addition, when costs are mentioned in this paper, they refer to the capital expenditures to obtain and install the modification kits, but not any associated operating cost increases. However, this combination of no attrition and modification costs has proved to be an effective surrogate in representing the capital and operating outlays of the 100 percent modification program as calculated in the Final EIS. Thus, even though this is actually a worst case analysis of the capital impacts upon present airline fleets, the results are highly applicable in studying the financial effect of total costs upon the attritioned fleet of the EIS. All assumptions are fully discussed in Section III.

Section II Sensitivity Analysis

What effect will the predicted increase in fares have on the demand for air carriers' services? This analysis answered the question by looking at expected changes in domestic passengers and cargo. The FAA has developed models which describe historical relationships between economic and aviation activity. These relationships, extrapolated into the future, form the basis for passenger and cargo forecasts. The estimated equation for domestic enplanements is 1/

$ENP = 76.05 + 1.59*CMP + 2.24*PAT - 0.16*REL + 2.94*TQR - 6.87*STR$
where;

ENP = passengers boarding scheduled domestic flights (in millions).

CMP = number of civilians employed (in millions).

PAT = investment in air transport industry (in billions of dollars).

REL = price of air transportation relative to that of other modes of transportation (index in 1967 dollars). This is the variable altered by changes in fares.

TQR = seasonal demand for air carrier services. TQR is one in the third quarter and zero in all others.

STR = dummy variable used to estimate the effect of major airline strikes. Zero in all other usages.

By increasing the relative air transportation costs (REL) by the .5 percent (average) and 2.0 percent (maximum) changes in fares due to modification expenditures, there will be an implied decrease in enplanements. However, in this case, the decrease is so slight that it appears to be almost immeasurable. Likewise, predictions of domestic enplaned cargo can be obtained by utilizing the following equation 2/:

$$\begin{aligned}
 RCTM_t &= 777.33 + 4.85*(GNP_t - GNP_{t-1}) \\
 &+ 1.79*GNP_{t-1} - 54.22*FR_t + 187.09 \\
 &+ .44*RCTM_{t-1}
 \end{aligned}$$

$$EC_t = CnV_t * RCTM_{t-1}$$

where;

$RCTM$ = Revenue cargo ton miles (in millions).

GNP = U.S. Gross National Product (in billions).

FR = freight rate (in cents). This value is affected by changes in waybill.

EC = enplaned tons.

CnV = conversion of revenue ton-miles to enplaned tons by application of projected values of average haul distance.

t = year.

Increases in freight rates by .5 percent (average), and 2.0 percent (maximum) produce decreases in enplaned tons of .1 percent, and .6 percent, respectively.

Section III Assumptions

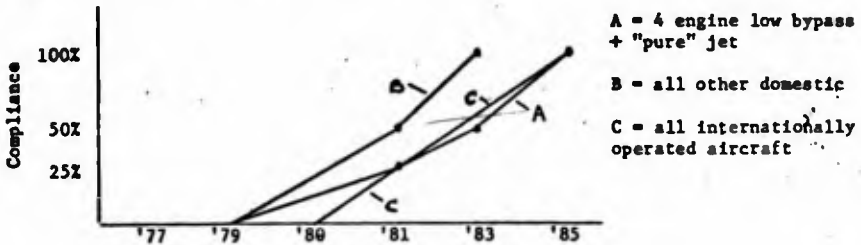
- Modification Costs

The costs per kit of aircraft modification were obtained through inquiries to the manufacturers. These costs are presented in the Final EIS for FAR 36 Compliance Regulation on page D-39.

- Compliance Schedule

The schedule is prescribed in the amendment to Part 91 of the FAR 36 compliance rule. Figure 1 displays the schedule graphically.

Figure 1 - Compliance Schedule



- Candidate aircraft

The fleet is composed of the total noncomplying aircraft in the United States as of December 31, 1975. No attrition was assumed through the period January 1, 1977, to January 1, 1985. Only revenue generating aircraft were counted.

- Cargo and passenger revenues

The future U.S. domestic and international revenues were obtained through official FAA forecasts. 1,2/ Individual airlines were assumed to maintain a constant share of the market from the present out into the future.

- Discount rates

Two discount rates were tested. The Federal Government requires the use of a 10 percent discount rate to be used in evaluating time distributed costs and benefits. 3/ The CAB recommends the use of 12 percent as a measure of the rate of return on investment.

- Aircraft in international operation

Since domestic and internationally operated aircraft conform to different compliance schedules, an estimate of the distribution for each airline is important. An inquiry into the February 1976, Official Airline Guide data tape revealed the proportion of domestic to international operations for each airline and for each aircraft type.

TABLE 1
COST ANALYSIS OF FAR 26 COMPLIANCE RULE

		COST (\$ MILLIONS)		* AIR FARE ADJUSTMENT (%)	
AIRLINES	# AC MOD.	1976 \$	10% DISCOUNT	1976 \$	10% DISCOUNT
TRUNKS					
American	202	134.5	78.8	.7	.6
Braniff	53	22.7	13.7	.5	.4
Continental	25	12.8	7.8	.3	.2
Delta	117	62.2	37.5	.5	.4
Eastern	177	42.5	28.2	.3	.3
National	40	9.1	5.9	.2	.2
Northwest	26	16.0	9.4	.2	.2
United	290	136.4	82.4	.6	.5
Western	59	36.8	21.8	.7	.6
TOTAL	999	474.1	285.5	.5	.5
Pan Am	79	94.8	54.1	.6	.5
Trans World	174	119.0	69.7	.7	.6
TOTAL	253	213.8	123.8	.6	.6
TOTAL	1252	687.9	409.2	.5	.5
LOCAL SERVICE					
Air West	41	11.1	7.2	.8	.7
Allegheny	36	9.7	6.2	.2	.2
Frontier	16	4.2	2.8	.3	.3
North Central	2	.5	.4	Negligible	
Omair	20	5.4	2.5	.7	.7
Piedmont	19	5.1	3.4	.4	.4
Southern	27	7.2	4.8	.8	.8
Texas Int'l.	19	5.1	2.3	.6	.6
TOTAL	180	48.5	31.7	.4	.4
INFRASTATE, ALASKA & HAWAII					
Alaska	9	2.0	1.2	.4	.4
Wien Alaska	4	1.1	.7	.5	.5
Aloha	7	1.9	1.2	.6	.6
Hawaiian	5	1.4	.9	.3	.3
Air Calif.	7	1.9	1.2	.1	.1
PSA	24	5.5	2.6	1.9	1.9
Southwest	4	1.1	.7	.1	.1
TOTAL	60	14.9	9.6	.2	.2
SUPPLEMENTAL					
Capitol Int'l.	2	2.4	1.4	.2	.2
Overseas Int'l.	9	7.1	4.1	.5	.4
Trans Int'l.	6	7.2	4.1	.8	.7
World	11	9.3	5.4	.5	.5
TOTAL	28	26.0	15.0	.5	.4
ALL CARGO					
Airlift Int'l	6	6.2	3.6	1.9	1.6
Flying Tiger	16	19.2	11.0	.8	.7
Seaboard	11	13.2	7.5	1.2	1.0
TOTAL	33	38.6	22.1	1.0	.9
GRAND TOTAL	1553	816	488	.5	.4

*The figures in these columns reflect the average fare adjustment required to offset compliance costs over the eight-year timeframe.

References

1. U.S. Federal Aviation Administration, Washington, D.C., Aviation Forecasts: Fiscal Years 1977-1988. Final report, September 1976. FAA-AVP-76-17.
2. U.S. Department of Transportation, Transportation System Center. Forecasting Models and Forecasts of U.S. Domestic and U.S. International Air Freight Demand. A draft staff study, September 1976, SS-211-U1-5A.
3. Office of Management and Budget. (Untitled.) Discount rates to be used in evaluating time distributed costs and benefits, March 27, 1972, A-94.

Mr. FLORIO. Mr. Madigan?

Mr. MADIGAN. Would it be possible that your study would also contemplate the other options that would be available to airlines? For example, some airlines might have the option of putting new engines on the airplanes. Other airlines flying different types of equipment might not have that option.

For examples, is it possible that a majority of the fleet owned by an airline would be airplanes in a category where new engines could be fitted and that in the case of another airline a majority of their airplanes would be the DC-9-type airplane, where it would not be economical to fit a new engine?

Would you have that on paper, that it can be presented to the subcommittee?

Mr. WESLER. That can be developed. We have almost all that data available. We will be pleased to provide that to the subcommittee.

Mr. MADIGAN. Thank you.

[Testimony resumes on p. —.]

[The following material was received for the record:]

AVAILABLE OPTIONS FOR COMPLIANCE
WITH NOISE REQUIREMENTS OF
14 CFR 91, SUBPART E

<u>Aircraft Type</u>	<u>Retrofit</u>	<u>Re-Engine</u>	<u>Replacement</u>
DC-9	Yes (\$190,000)	No) DC-9-30/50) 737-200
737	Yes (\$230,000)	No) 727-200) *DC-9-80
BAC-1-11	Yes (\$250,000 est.)	No) *A-300/310) *757
727	Yes (\$210,000)	No) *DC-10-10
DC-8	Yes (\$3,000,000 est.)	Yes (\$9,000,000))	**747-200/SP) **DC-10-30/40
707/720	Yes (\$3,200,000)	Yes (\$11,000,000))	**L-1011) *767

Costs shown are individual shipset costs without spares but including estimated manpower costs in 1979 dollars.

*Comply with Stage 3 noise standards of 14 CFR 36.

**Some models comply with Stage 3 noise standards of 14 CFR 36.

[4910 '3-M]

NOTICES

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TURBOJET SUBSONIC AIRPLANES

Fleet Inventory and Noise Rules Compliance

AGENCY: Federal Aviation Administration.

SUBJECT: Report of Fleet Inventory and Status of Compliance with FAR Part 36 or Subpart E of FAR Part 91 for turbojet subsonic airplanes with maximum gross weights of 75,000 pounds or more. Subpart E of Part 91 specifies phased compliance dates for FAR Parts 121 and 135 certificate holders, and a final compliance date of January 1, 1985, for all operators.

SUMMARY: A report of the fleet inventory and noise rules compliance status of turbojet subsonic airplanes as of January 1, 1977, is published below. The inventory information was obtained from FAA aircraft records, while the compliance status was, in most instances, provided by the individual operator. Where operator-provided data were not available, the FAA has shown the status of the aircraft at the time they were placed on the records.

As stated in the preamble to Subpart E (Amendment 91-136, 41 FR 56046, December 23, 1976), compliance can be achieved by the acoustical modification, or "retrofit," of noncomplying airplanes or through their replacement with complying airplanes. The purpose of the amendment is not to force the retrofit (acoustical modification or re-engining) of older airplanes but rather to encourage each operator to select that option or those options which are best suited to each individual economic situation, and to the airplane fleet age and mix.

The FAA will monitor the progress being made by Parts 121 and 135 certificate holders in meeting the phased compliance dates of § 91.305(b) and administer replacement plans submitted under § 91.305(c). The FAA will also monitor the fleet mix being operated by Parts 91 and 123 operators which must be brought into compliance on or before December 31, 1984. Compliance requirements for airplanes engaged in foreign air commerce as addressed in § 91.307 (for U.S. operators and for airplanes being operated at U.S. airports by Part 129 certificate holders) will be the subject of future rulemaking.

The January 1977 fleet inventory summary shows, for each operator, the number of airplanes by make and model and their reported compliance status with Part 36 or Subpart E of Part 91. Those noncomplying (Stage I) airplanes must be brought into compliance with Part 36 without the use of tradeoffs (see § 91.301(b)) unless the operator shows that, after full applica-

tion of existing technology, the use of tradeoffs is required for compliance with Part 36 (column marked E/Part 91 NO). All other airplanes have been reported as meeting either the Stage II or Stage III requirements of Part 36 (column marked Part 36 YES).

FOR FURTHER INFORMATION: Operators desiring to submit updated information and compliance/replacement plans and persons desiring a more detailed listing identifying each individual airplane should address Richard N. Tedrick, Noise Policy and Regulatory Branch, AEE-110, Office of Environment and Energy, Federal Aviation Administration, 600 Independence Avenue, SW., Washington, D.C. 20591, telephone (202) 755-9027.

Issued in Washington, D.C. on March 16, 1979.

JOHN E. WESLER,
Acting Director
of Environment and Energy.

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[4910-13-C]

SUMMARY OF
U.S. REGISTERED CIVIL SUBSONIC TURBOJET AIRPLANES OF
75000 POUNDS OR MORE WITH STANDARD AIRWORTHINESS CERTIFICATES
IN THE OPERATOR'S FLEET JANUARY 1, 1977

AIR CARRIER INVENTORY

<u>OPERATOR</u>	<u>AIRPLANE (Make/Model)</u>	<u>TOTAL No.</u>	<u>REPORTED COMPLIANCE STATUS</u>		
			<u>PART</u>	<u>E/FALT</u>	<u>PART</u>
			<u>36</u> <u>YES</u>	<u>91</u> <u>NO</u>	<u>36</u> <u>(X)</u>
<u>*Aero America, Inc.</u>	B-720	8	-	8	0
	<u>FLEET</u>	<u>8</u>	-	<u>8</u>	<u>0</u>
<u>Air California, Inc.</u>	B-737	8	-	8	0
	<u>FLEET</u>	<u>8</u>	-	<u>8</u>	<u>0</u>
<u>Airlift International, Inc.</u>	B-727	1	-	1	0
	DC-8	8	-	8	0
	<u>FLEET</u>	<u>9</u>	-	<u>9</u>	<u>0</u>
<u>Alaska Airlines, Inc.</u>	B-727	9	-	9	0
	<u>FLEET</u>	<u>9</u>	-	<u>9</u>	<u>0</u>
<u>Allegheny Airlines</u>	BAC 1-11	31	-	31	0
	DC-9	49	<u>8</u>	41	16.3
	<u>FLEET</u>	<u>80</u>	<u>8</u>	<u>72</u>	<u>10.0</u>
<u>Aloha Airlines</u>	B-737	6	-	6	0
	<u>FLEET</u>	<u>6</u>	-	<u>6</u>	<u>0</u>
<u>American Airlines</u>	B-707-100	47	-	47	0
	B-707-300	41	-	41	0
	B-720	1	-	1	0
	B-727	115	17	98	14.8
	B-747	10	-	10	0
	DC-10	25	25	-	100.0
	<u>FLEET</u>	<u>239</u>	<u>42</u>	<u>197</u>	<u>17.6</u>
<u>Braniff International</u>	BAc 1-11	1	-	1	0
	B-727	73	21	52	28.8
	B-747	1	1	-	100.0
	DC-8	12	-	12	0
	<u>FLEET</u>	<u>87</u>	<u>22</u>	<u>65</u>	<u>25.3</u>
<u>Capitol International Airways</u>	DC-8	12	-	12	0
	<u>FLEET</u>	<u>12</u>	-	<u>12</u>	<u>0</u>
<u>Continental Airlines</u>	B-727	52	8	44	15.4
	DC-10	15	15	-	100.0
	<u>FLEET</u>	<u>67</u>	<u>23</u>	<u>44</u>	<u>34.3</u>

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OPERATOR	AIRPLANE (Make/Model)	TOTAL NO.	REPORTED COMPLIANCE STATUS		
			PAK1	L/PART	PAK1
			26 YES	91 NO	36 (2)
<u>Palsa Airlines</u>	B-727	84	71	13	84.5
	B-747	3	-	3	0
	DC-8	31	-	31	0
	DC-9	58	-	58	0
	L-1011	21	21	-	100.0
	<u>FLEET</u>	<u>197</u>	<u>92</u>	<u>105</u>	<u>46.7</u>
<u>Eastern Airlines</u>	B-727	118	6	112	5.1
	DC-8	2	-	2	0
	DC-9	87	10	77	11.5
	L-1011	30	30	-	100.0
	<u>FLEET</u>	<u>237</u>	<u>46</u>	<u>191</u>	<u>19.4</u>
<u>Evergreen International Airways</u>	DC-8	3	-	3	0
	<u>FLEET</u>	<u>3</u>	<u>-</u>	<u>3</u>	<u>0</u>
<u>Flying Tiger Line</u>	B-747	3	3	-	100.0
	DC-8	16	-	16	0
	<u>FLEET</u>	<u>19</u>	<u>3</u>	<u>16</u>	<u>15.8</u>
<u>Frontier Airlines</u>	B-737	21	1	20	4.8
	<u>FLEET</u>	<u>21</u>	<u>1</u>	<u>20</u>	<u>4.8</u>
<u>Hawaiian Airlines</u>	DC-9	13	3	10	23.1
	<u>FLEET</u>	<u>13</u>	<u>3</u>	<u>10</u>	<u>23.1</u>
<u>Hughes Aircraft</u>	B-747	3	3	-	100.0
	DC-9	34	-	34	0
	<u>FLEET</u>	<u>37</u>	<u>3</u>	<u>34</u>	<u>8.1</u>
<u>National Airlines</u>	B-727	41	-	41	0
	DC-10	15	15	-	100.0
	<u>FLEET</u>	<u>56</u>	<u>15</u>	<u>41</u>	<u>26.8</u>
<u>North Central Airlines</u>	DC-9	27	8	19	29.6
	<u>FLEET</u>	<u>27</u>	<u>8</u>	<u>19</u>	<u>29.6</u>
<u>Northwest Airlines</u>	B-707-300	8	-	8	0
	B-727	63	8	55	12.7
	B-747	20	3	17	15.0
	DC-10	22	22	-	100.0
	<u>FLEET</u>	<u>113</u>	<u>33</u>	<u>80</u>	<u>29.2</u>
<u>Overseas National Airways</u>	DC-8	12	-	12	0
	<u>FLEET</u>	<u>12</u>	<u>-</u>	<u>12</u>	<u>0</u>
<u>South Airlines</u>	DC-9	27	1	26	3.7
	<u>FLEET</u>	<u>27</u>	<u>1</u>	<u>26</u>	<u>3.7</u>

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OPERATOR	AIRPLANE (Make/Model)	TOTAL NO.	REPORTED COMPLIANCE STATUS		
			PART 36 YES	E/PART 91 NO	PART 36 (X)
<u>*Pacific American Airlines</u>	BAC 1-11	1	-	1	0
	<u>FLEET</u>	<u>1</u>	-	<u>1</u>	<u>0</u>
<u>Pacific Southwest Airlines</u>	B-727	24	1	23	4.2
	<u>FLEET</u>	<u>24</u>	<u>1</u>	<u>23</u>	<u>4.2</u>
<u>Pan American World Airways</u>	B-707-300	68	-	68	0
	B-720	2	-	2	0
	B-727	13	-	13	0
	B-747	38	14	24	36.8
	<u>FLEET</u>	<u>121</u>	<u>14</u>	<u>107</u>	<u>11.6</u>
<u>Piedmont Aviation, Inc.</u>	B-737	19	-	19	0
	<u>Fleet</u>	<u>19</u>	-	<u>19</u>	<u>0</u>
<u>Seaboard World Airlines</u>	B-747	2	2	0	100.0
	DC-8	12	-	12	0
	<u>FLEET</u>	<u>14</u>	<u>2</u>	<u>12</u>	<u>14.3</u>
<u>Southern Airways, Inc.</u>	DC-9	28	-	28	0
	<u>FLEET</u>	<u>28</u>	-	<u>28</u>	<u>0</u>
<u>Southwest Airlines</u>	B-737	6	3	3	50.0
	<u>FLEET</u>	<u>6</u>	<u>3</u>	<u>3</u>	<u>50.0</u>
<u>Texas International Airlines</u>	DC-9	25	2	23	8.0
	<u>FLEET</u>	<u>25</u>	<u>2</u>	<u>23</u>	<u>8.0</u>
<u>Trans International Airlines</u>	DC-8	11	-	11	0
	DC-10	3	3	-	100.0
	<u>FLEET</u>	<u>14</u>	<u>3</u>	<u>11</u>	<u>21.4</u>
<u>Trans World Airlines</u>	B-707-100	40	-	40	0
	B-707-300	60	-	60	0
	B-727	74	39	35	52.7
	B-747	11	-	11	0
	CV-22	25	-	25	0
	DC-9	19	-	19	0
	L-1011	30	30	-	100.0
	<u>FLEET</u>	<u>259</u>	<u>69</u>	<u>190</u>	<u>26.7</u>
<u>United Airlines</u>	B-727	150	-	150	0
	B-737	59	-	59	0
	B-747	18	6	12	33.4
	DC-8	100	-	100	0
	DC-10	37	37	-	100.0
	<u>FLEET</u>	<u>364</u>	<u>43</u>	<u>321</u>	<u>11.8</u>

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OPERATOR	AIRPLANE (Make/Model)	TOTAL NO.	REPORTED COMPLIANCE STATUS		
			PART 26 YES	E/PART 91 NO	PART 36 (2)
<u>Delta Airlines</u>	B-727	84	71	13	84.5
	B-747	3	-	3	0
	DC-8	31	-	31	0
	DC-9	58	-	58	0
	L-1011	21	21	-	100.0
	<u>FLEET</u>	<u>197</u>	<u>92</u>	<u>105</u>	<u>46.7</u>
<u>Eastern Airlines</u>	B-727	118	6	112	5.1
	DC-8	2	-	2	0
	DC-9	87	10	77	11.5
	L-1011	30	30	-	100.0
	<u>FLEET</u>	<u>237</u>	<u>46</u>	<u>191</u>	<u>19.4</u>
<u>Evergreen International Airways</u>	DC-8	3	-	3	0
	<u>FLEET</u>	<u>3</u>	-	<u>3</u>	<u>0</u>
<u>Flying Tiger Line</u>	B-747	3	3	-	100.0
	DC-8	16	-	16	0
	<u>FLEET</u>	<u>19</u>	<u>3</u>	<u>16</u>	<u>15.8</u>
<u>Frontier Airlines</u>	B-737	21	1	20	4.8
	<u>FLEET</u>	<u>21</u>	<u>1</u>	<u>20</u>	<u>4.8</u>
<u>Hawaiian Airlines</u>	DC-9	13	3	10	23.1
	<u>FLEET</u>	<u>13</u>	<u>3</u>	<u>10</u>	<u>23.1</u>
<u>Hughes Airwest</u>	B-747	3	3	-	100.0
	DC-9	34	-	34	0
	<u>FLEET</u>	<u>37</u>	<u>3</u>	<u>34</u>	<u>8.1</u>
<u>National Airlines</u>	B-727	41	-	41	0
	DC-10	15	15	-	100.0
	<u>FLEET</u>	<u>56</u>	<u>15</u>	<u>41</u>	<u>26.8</u>
<u>North Central Airlines</u>	DC-9	27	6	19	29.6
	<u>FLEET</u>	<u>27</u>	<u>8</u>	<u>19</u>	<u>29.6</u>
<u>Northwest Airlines</u>	B-707-300	8	-	8	0
	B-727	63	8	55	12.7
	B-747	20	3	17	15.0
	DC-10	22	22	-	100.0
	<u>FLEET</u>	<u>113</u>	<u>33</u>	<u>80</u>	<u>29.2</u>
<u>*Overseas National Airways</u>	DC-8	12	-	12	0
	<u>FLEET</u>	<u>12</u>	-	<u>12</u>	<u>0</u>
<u>Ozark Airlines</u>	DC-9	27	1	26	3.7
	<u>FLEET</u>	<u>27</u>	<u>1</u>	<u>26</u>	<u>3.7</u>

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OPERATOR	AIRPLANE (Make/Model)	TOTAL NO.	REPORTED		
			COMPLIANCE	STATUS	
			PART	E/PART	PART
			36 YES	91 NO	36 (X)
<u>*Pacific American Airlines</u>	BAC 1-11	1	-	1	0
	<u>FLEET</u>	<u>1</u>	-	<u>1</u>	<u>0</u>
<u>Pacific Southwest Airlines</u>	B-727	24	1	23	4.2
	<u>FLEET</u>	<u>24</u>	<u>1</u>	<u>23</u>	<u>4.2</u>
<u>Pan American World Airways</u>	B-707-300	68	-	68	0
	B-720	2	-	2	0
	B-727	13	-	13	0
	B-747	38	14	24	36.8
	<u>FLEET</u>	<u>121</u>	<u>14</u>	<u>107</u>	<u>11.6</u>
<u>Piedmont Aviation, Inc.</u>	B-737	19	-	19	0
	<u>Fleet</u>	<u>19</u>	-	<u>19</u>	<u>0</u>
<u>Seaboard World Airlines</u>	B-747	2	2	0	100.0
	DC-8	12	-	12	0
	<u>FLEET</u>	<u>14</u>	<u>2</u>	<u>12</u>	<u>14.3</u>
<u>Southern Airways, Inc.</u>	DC-9	28	-	28	0
	<u>FLEET</u>	<u>28</u>	-	<u>28</u>	<u>0</u>
<u>Southwest Airlines</u>	B-737	6	3	3	50.0
	<u>FLEET</u>	<u>6</u>	<u>3</u>	<u>3</u>	<u>50.0</u>
<u>Texas International Airlines</u>	DC-9	25	2	23	8.0
	<u>FLEET</u>	<u>25</u>	<u>2</u>	<u>23</u>	<u>8.0</u>
<u>Trans International Airlines</u>	DC-8	11	-	11	0
	DC-10	3	3	-	100.0
	<u>FLEET</u>	<u>14</u>	<u>3</u>	<u>11</u>	<u>21.4</u>
<u>Trans World Airlines</u>	B-707-100	40	-	40	0
	B-707-300	60	-	60	0
	B-727	74	39	35	52.7
	B-747	11	-	11	0
	CV-22	25	-	25	0
	DC-9	19	-	19	0
	L-1011	30	30	-	100.0
	<u>FLEET</u>	<u>259</u>	<u>69</u>	<u>190</u>	<u>26.7</u>
<u>United Airlines</u>	B-727	150	-	150	0
	B-737	59	-	59	0
	B-747	18	6	12	33.4
	DC-8	100	-	100	0
	DC-10	37	37	-	100.0
	<u>FLEET</u>	<u>364</u>	<u>43</u>	<u>321</u>	<u>11.8</u>

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OPERATOR	AIRPLANE (Make/Model)	TOTAL NO.	REPORTED COMPLIANCE STATUS		
			PART	E/PART	PART
			36 YES	91 NO	36 (%)
<u>Western Airlines</u>	B-707-300	5	-	5	0
	B-720	18	-	18	0
	B-727	21	15	6	71.4
	B-737	24	-	24	0
	DC-10	7	7	-	100.0
	<u>FLEET</u>	<u>75</u>	<u>22</u>	<u>53</u>	<u>29.4</u>
<u>Wien Air Alaska</u>	B-737	7	3	4	42.9
	<u>FLEET</u>	<u>7</u>	<u>3</u>	<u>4</u>	<u>42.9</u>
<u>World Airways, Inc.</u>	B-727	4	-	4	0
	B-747	3	3	-	100.0
	DC-8	5	-	5	0
	<u>FLEET</u>	<u>12</u>	<u>3</u>	<u>9</u>	<u>25.0</u>
<u>U.S. AIR CARRIER FLEET TOTALS</u>		<u>2256</u>	<u>465</u>	<u>1791</u>	<u>20.6</u>

NON-AIR CARRIER INVENTORY

OPERATOR/OWNER	AIRPLANE Make/Model	TOTAL NO.	COMPLIANCE STATUS		
			PART	E/PART	PART
			36 YES	91 NO	36 (%)
<u>American Capitol Aviation Corp.</u>	B-727	1	1	-	100.0
	DC-9	1	-	1	0
	<u>FLEET</u>	<u>2</u>	<u>1</u>	<u>1</u>	<u>50.0</u>
<u>Ambassador, Inc. Travel Clubs</u>	B-720 (FLEET)	1	-	1	0
*Airmannia, Inc.	B-720 (FLEET)	1	-	1	0
*Air Travel, LTD.	CV-22 (FLEET)	1	-	1	0
Allis Chalmers Corp.	BAC 1-11 (FLEET)	1	-	1	0
*American Jet Industries	CV-22	2	-	2	0
	DC-8	2	-	2	0
	<u>FLEET</u>	<u>4</u>	<u>-</u>	<u>4</u>	<u>0</u>
<u>Amway Corporation</u>	BAC 1-11 (FLEET)	2	-	2	0
<u>Atlas Aircraft Corp.</u>	B-720 (FLEET)	1	-	1	0
<u>Aviation Sales, Inc.</u>	B-720 (FLEET)	4	-	4	0
<u>Aero Exchange</u>	DC-8 (FLEET)	2	-	2	0
<u>Aero Service Corp.</u>	SE-210 (FLEET)	1	-	1	0
*Aircraft Investors (1976)	DC-9 (FLEET)	1	-	1	0
*Aircraft Investors Retaining Corp.	CV-22 (FLEET)	5	-	5	0

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NOTICES

OPERATOR/OWNER	AIRPLANE Make/Model	TOTAL NO.	REPORTED COMPLIANCE STATUS		
			PART	E/PART	PART
			36 YES	91 NO	36 (%)
<u>Aircraft Owners (1975)</u>	DC-9(FLEET)	1	-	1	0
* <u>Frederick B. Ayers & Assoc.</u>	CV-30	1	-	1	0
	DC-8	3	-	3	0
	<u>FLEET</u>	4	-	4	0
* <u>Basna Air Services, Inc.</u>	B-707-300(FLEET)	1	-	1	0
<u>Boeing Commercial Airplane Company</u>	B-707-100	1	-	1	0
	B-727	2	-	2	0
	B-737	1	-	1	0
	B-747	1	-	1	0
	<u>FLEET</u>	5	-	5	0
<u>Cameron Iron Works, Inc.</u>	BAC 1-11(FLEET)	1	-	1	0
* <u>Chandler Air Lease Corp.</u>	B-727(FLEET)	1	-	1	0
<u>Charollite Aircraft Corp.</u>	DC-8(FLEET)	5	-	5	0
<u>Chase Manhattan Bank</u>	B-737(FLEET)	1	-	1	0
<u>Chemical Bank Trustee</u>	B-707-300(FLEET)	4	-	4	0
<u>Chessie Services, Inc.</u>	BAC 1-11(FLEET)	1	-	1	0
* <u>Concave Aircraft Leasing Corp.</u>	DC-8(FLEET)	1	-	1	0
* <u>Contemporary Entertainment</u>	B-720(FLEET)	1	-	1	0
* <u>Continental TLL. Nat'l Bank</u>	B-727(FLEET)	1	-	1	0
* <u>Commonwealth Plan</u>	BAC 1-11(FLEET)	1	-	1	0
<u>Crocker National Bank</u>	DC-8(FLEET)	1	-	1	0
<u>Doral Trading Corp.</u>	B-720(FLEET)	1	-	1	0
<u>Douglas Aircraft</u>	DC-8	4	-	4	0
	DC-9	10	1	9	10.0
	DC-10	1	1	-	100.0
	<u>FLEET</u>	15	2	13	13.4
<u>DOT/FAA</u>	B-720	1	-	1	0
	B-727	4	-	4	0
	CV-22	1	-	1	0
	DC-9	1	-	1	0
	<u>FLEET</u>	7	-	7	0
<u>Dresser Industries</u>	BAC 1-11	3	-	3	0
	B-707-100	1	-	1	0
	<u>FLEET</u>	4	-	4	0

NOTICES

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OPERATOR/OWNER	AIRPLANE Make/Model	TOTAL NO.	REPORTED COMPLIANCE STATUS		
			PART	L/PART	PART
			36 YES	91 NO	36 (?)
*Eastern Aircraft Services	B-720(FLEET)	1	-	1	0
*Exchange National Bank	B-727(FLEET)	1	1	-	100.0
Vincent Faix	CV-22(FLEET)	1	-	1	0
*Four Winds, Inc.	CV-22(FLEET)	1	-	1	0
*First National Bank Chicago	BAC-1-11(FLEET)	1	-	1	0
*General Synamics Corp.	CV-30(FLEET)	1	-	1	0
*General Electric Credit Corp.	BAC 1-11(FLEET)	1	-	1	0
*James H. Goodwin and Associates	DC-8(FLEET)	1	-	1	0
Hilton Hotels	BAC 1-11(FLEET)	1	-	1	0
Hirshman Corporation	CV-22(FLEET)	1	-	1	0
Independent Air, Inc.	B-720	1	-	1	0
	SE-210	2	-	2	0
	FLEET	3	-	3	0
*International Air Leases, Inc.	B-720	1	-	1	0
	B-727	1	-	1	0
	CV-22	1	-	1	0
	FLEET	3	-	3	0
	SE-210(FLEET)	3	-	3	0
*International Air Limited					
*International Tele & Tele Corp.	B-727(FLEET)	1	-	1	0
*International Transport Leasing Corp.	DC-8(FLEET)	1	-	1	0
*International Travel Marketing Corp.	B-720(FLEET)	1	-	1	0
*Jet Power, Inc.	B-707-100	1	-	1	0
	B-707-300	1	-	1	0
	DC-8	1	-	1	0
	FLEET	3	-	3	0
Jet Set Travel Club	B-720(FLEET)	1	-	1	0
Kidde Credit Corp.	BAC 1-11(FLEET)	1	-	1	0
Ely Lilly International Corp.	BAC 1-11	1	-	1	0
	B-707-300	1	-	1	0
	FLEET	2	-	2	0
Ledbetter Leasing Co	B-727(FLEET)	1	-	1	0
Los Angeles Dodger, Inc.	B-720(FLEET)	1	-	1	0
*L & S Leasing Co	B-707-300(FLEET)	1	-	1	0
Mark III Leasing Co	B-727(FLEET)	1	-	1	0
Miba, Inc.	DC-8(FLEET)	1	-	1	0
*W. A. Moncrief	BAC 1-11(FLEET)	1	-	1	0
Py Seven Children, Inc.	B-720(FLEET)	1	-	1	0
*National Aircraft Leasing Ltd.	BAC 1-11	7	-	7	0
	B-707-100	1	-	1	0
	B-727	1	-	1	0
	FLEET	9	-	9	0
National Aircraft Leasing	BAC 1-11(FLEET)	2	-	2	0
*National Equipment Rental, Ltd.	B-720(FLEET)	1	-	1	0
Nonands, Inc.	CV-30(FLEET)	1	-	1	0

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NOTICES

OPERATOR/OWNER	AIRPLANE Make/Model	TOTAL NO.	REPORTED COMPLIANT STATUS		
			PART YES	E/PART NO	PART 36 (%)
Offaet, Inc.	B-707-100 (FLEET)	1	-	1	0
*Oceanic Air, Inc.	BAC 1-11 (FLEET)	1	-	1	0
*Omni Aircraft Sales, Inc.	B-727 (FLEET)	1	-	1	0
Onyx Aviation, Inc.	CV-22 (FLEET)	1	-	1	0
Orient Pacific Airways	CV-22 (FLEET)	1	-	1	0
*Perfect Air Tours, Inc.	B-707-300 (FLEET)	2	-	2	0
Ports of Call Travel Club	CV-30 (FLEET)	7	-	7	0
Pegasus International T.C.	DC-8 (FLEET)	1	-	1	0
Elvia A. Presley	CV-22 (FLEET)	1	-	1	0
Walter Probst	BAC 1-11 (FLEET)	1	-	1	0
*RDC Marine, Inc.	CV-22 (FLEET)	1	-	1	0
Rockwell International Corp.	BAC 1-11	1	-	1	0
	B-727	1	-	1	0
	FLEET	2	-	2	0
Roger Brothers	BAC 1-11 (FLEET)	1	-	1	0
Rosenbaum Aviation, Inc.	DC-8 (FLEET)	6	-	6	0
Richard M. Scaife	DC-9 (FLEET)	1	-	1	0
Sharon Steel Corp.	BAC 1-11 (FLEET)	1	-	1	0
*James E. Stewart	BAC 1-11 (FLEET)	1	-	1	0
*Tenneco, Inc.	BAC 1-11 (FLEET)	1	-	1	0
Todd Equipment Leasing	B-720 (FLEET)	1	-	1	0
Tracinda Investment Corp.	B-707-100 (FLEET)	1	-	1	0
*Transexecutive Aviation Inc.	CV-22 (FLEET)	5	-	5	0
Trans Union Aircraft Leasing	DC-8 (FLEET)	1	-	1	0
*Unilease, Inc.	DC-8 (FLEET)	1	-	1	0
*Universal Applicators, Inc.	B-720 (FLEET)	1	-	1	0
*United Aircraft Leasing Corp.	DC-8 (FLEET)	5	-	5	0
United States Trust Co.	B-737	2	-	2	0
	B-747	4	4	-	100.0
	DC-10	2	2	-	100.0
	FLEET	8	6	2	75.0
United Technologies	B-727 (FLEET)	1	-	1	0
*United Trade International, Inc.	B-707-300 (FLEET)	1	-	1	0
*Westinghouse Electric Corp.	DC-9 (FLEET)	1	-	1	0
Williams Companies	BAC 1-11 (FLEET)	1	-	1	0
Wilmington Trust Co.	B-747 (FLEET)	2	2	-	100.0
<u>U.S. NON-AIR CARRIER FLEET TOTALS</u>		<u>191</u>	<u>12</u>	<u>179</u>	<u>6.3</u>
<u>OVERALL U.S. REGISTERED FLEET</u>		<u>2447</u>	<u>477</u>	<u>1970</u>	<u>19.5</u>
(Combined air carrier and non-air carrier - 1/1/77)					

*NON-VERIFIED BY OWNER

[FR Doc. 79-9510 Filed 3-28-79; 8:45 am]

FEDERAL REGISTER, VOL. 44, NO. 62—THURSDAY, MARCH 29, 1979

Mr. FLORIO. You are aware of the provision in the House bill that provides for waivers of two- and three-engine aircraft that fly in small and medium airports. What types of airports would be affected by this? Perhaps you could name a few of the airports. Wouldn't these airplanes then be able to fly into heavily impacted airports such as Chicago, Philadelphia, and New York. Would, marketing decisions then be made in accordance with the ability to get in or out from under the 60-40 percent breakdown? And have you been able to determine how many aircraft or how many operations would be affected if the House should enact such a provision?

Mr. WESLER. Much as General Von Kann just previously testified to you, sir, it is very difficult to identify the number of aircraft or exactly which aircraft would benefit from that section of the proposed bill.

We have, on a carrier-by-carrier basis, identified that approximately nine of the carriers on a carrierwide basis would meet the 60-percent/30-percent criteria which are included in that section.

Mr. FLORIO. Under their existing operating patterns?

Mr. WESLER. As of last month's operations, yes, sir.

Mr. FLORIO. There would be nothing to preclude those carriers from modifying their operating patterns to comply with the law and perhaps effectuate different results in terms of impact?

Mr. WESLER. That is correct, sir. They could reschedule; they could emphasize, if you will, and I believe this was the intent of the other committee, service into small communities and therefore meet the criteria.

The kinds of airports that will still receive these noisy aircraft, that is, the large hubs, up to 40 percent of the operations of these noisy aircraft would still go into the larger hubs—Chicago's O'Hare; Los Angeles; JFK in New York; San Francisco; Dallas-Fort Worth; Denver—there are 26 major hubs, so called.

Mr. FLORIO. What are the larger of the smaller airports, that is, the 60 percent? I would like to get some indication of the magnitude of what we are discussing. It has been represented to me that San Diego and Cincinnati would fall into that category. Is that representation correct?

Mr. WESLER. No, sir. San Diego is a major hub. Cincinnati, I am sure, is a medium hub.

Mr. FLORIO. So we are not automatically talking about little towns? Cincinnati is not a town, but a fairly large community, is it not?

Mr. WESLER. Yes, sir. Of course, Cincinnati's airport is across the river from Cincinnati. We are dealing with three categories of airports, sir: The so-called major hub, which is defined as greater than 1 percent of the enplanements; and there are 26 of these.

There is a so-called medium hub, which has between a quarter of a percent and 1 percent of the total enplanements.

Mr. FLORIO. Mediums are within the 60-percent breakdown?

Mr. WESLER. Yes, sir, at least 60 percent into mediums and small.

Mr. FLORIO. Would Cincinnati be an example of that?

Mr. WESLER. Of the medium. Then there are the small hubs, all the other airports, Roanoke and places such as that, which have less than a quarter of 1 percent of the enplanements.

Mr. TAYLOR. Mr. Chairman, let me make an observation regarding the two- and three-engine aircraft.

Of the 321 air carrier airports—and this includes them all—the large, medium, and small—75 percent of those 321 airports are serviced only by the two- and three-engine turbine-powered aircraft. I think that is significant.

It seems to me that irrespective of the size of the airport we can be sure that certainly the small- and the medium-size hubs are going to be treated by unretrofitted aircraft if this proposed legislation is passed. So the impact is clearly there.

One also might be reminded that clearly 40 percent of the operations of the untreated aircraft are going to be into locations which are already plagued by aviation or aircraft noise, and 40 percent is a rather considerable amount of the body of noise.

Mr. MADIGAN. Mr. Taylor, does the FAA receive complaints from people about aircraft noise?

Mr. TAYLOR. Yes, indeed we do.

Mr. MADIGAN. Do you keep a record of those complaints?

Mr. TAYLOR. Not here in Washington. Mr. Wesler might correct me if I am wrong. At the regional level we do. I have, and I have worked at both the regional level and Washington level, not really found random complaints very useful in establishing a pattern and I will tell you why.

For instance, at Boston, and that was my last regional location, the complaint levels seemed to be a function of a publicly announced change of procedure, for instance, a publicly announced change in schedules, or a publicly announced bitter fight between the Massachusetts Port Authority and let us say, east Boston. The complaint level would peak once the issue became public, irrespective of any real changes in the nature of aviation operations at Logan Airport.

To answer your question, yes, we do keep a "cuff" record on those things. Do we keep a formal record? We don't.

Mr. MADIGAN. So there is no way that we can analyze and determine from your records whether most of your complaints are on four-engine aircraft noise or two-engine aircraft noise? There is no analysis we could possibly draw from any source?

Mr. TAYLOR. I don't think so. Our attention has been for years focused on the noise generation characteristics of those two or three kinds of aircraft. As a consequence our analysis work is based on the generation of noise rather than public response to a given kind of noise.

Mr. FLORIO. Gentlemen, we thank you very much for your help. We are going to adjourn for a few moments. We will obviously stay in contact with you. If it is possible for any of your representatives to stay here for the balance of the hearing we would appreciate it. We have one or two more witnesses and your presence might be helpful. Thank you very much.

Mr. TAYLOR. Thank you, Mr. Chairman.

[Brief recess.]

Mr. FLORIO. Our next witness is Mr. Jack Corbett, the executive director of the Airport Operators Council. Mr. Corbett, I understood you were going to be a replacement. Now I understand Mr. Sattler is here as well.

Mr. Sattler, will you introduce your colleagues. Your statement will be made a part of the record in its entirety and we would appreciate your proceeding in summary fashion.

STATEMENT OF KARL R. SATTLER, ADMINISTRATOR, MARYLAND STATE AVIATION ADMINISTRATION, AND ALSO ON BEHALF OF THE AIRPORT OPERATORS COUNCIL INTERNATIONAL (AOCI), ACCOMPANIED BY JACK CORBETT, VICE PRESIDENT (AOCI); MARKEY MAYO, DIRECTOR, ENVIRONMENTAL PROGRAMS (AOCI); AND DAVID BENNETT, MARYLAND STATE AVIATION ADMINISTRATION

Mr. SATTLER. My name is Karl Sattler, Aviation Administrator for the State of Maryland. With me are Jack Corbett, AOIC vice president; Markey Mayo, AOIC director of environmental programs, and David Bennett of my staff. As you say, the AOIC testimony and my statement will be made part of the record.

I won't review those other than to state and to express strong opposition to the retrofit waivers. I would like to briefly state Maryland's experience in the aviation noise field and go further to point out how the waiver provision set forth in 303 through 306 would adversely affect the State of Maryland and its program.

Maryland in 1973, 1 year after the purchase of then Friendship Airport from the city of Baltimore, realized that nothing was going to be done in the aviation noise field at least in the foreseeable future and recognizing it was a serious problem that could only get worse, passed the Maryland Noise Act of 1974.

One portion of the act of 1974 deals with aviation noise. It adopts a two-pronged approach. On one side it places a burden on airport owners and operators within the State of Maryland. On the other side it places a burden on those jurisdictions surrounding the facility. We feel it is a very good law. It has been in effect for a short while. We have had very good luck with it. On the airport side it requires the airport operator to develop noise contours around the airport.

We have chosen the LDN methodology. At that time it was the best available to us. It also permits comparison with other types of transportation and environmental noise. There is a body of knowledge dealing with land use planning, dealing with LDN contours. After the airport operators has determined what his noise contours are not only at present but for a projected period of 5- and 10-year time frames, we did 1975, and 1980, and 1985, he is then required to analyze what are the impacts surrounding the airports.

Using LDN 65 as a benchmark, that equates to the old NEF 30. Once that analysis is made you have the determination of what impacts are there. The airport operator then is required to implement such procedures as he can within law that are economically feasible, technologically possible and do not abrogate flight safety, to reduce those impacts to the maximum extent possible.

Once that is accomplished, a public participation procedure is gone through to have these contours certified by the Aviation Administration. Once these are in place the local jurisdiction can no longer issue building permits for noncompatible land uses within the contours. The contours are in different increments, 1965,

1975, and 1980. A variety of land uses is permitted within each one and others are of course precluded.

Within LDN 65 residence is precluded around the two State-owned airports in the State of Maryland. One is BWI Airport, the other is Glenn Martin Airport, which is a very large general aviation facility utilized very heavily by corporate aircraft.

Mr. FLORIO. A question on that point. That approach to the relationship between lawsuits and measurement seems to be much more enlightened than the approach I have heard from other sources if measurement takes place that is going to assist in better planning that will result in reduced lawsuits. I have heard some say you are going to require measurement which will induce lawsuits because information would be available.

How do you evaluate the trade off between the two considerations?

Mr. SATTLE. I have also heard both sides of the coin. When we started this process we involved airlines and ATA. ATA told me for 2 years as soon as we put this process in place that the State of Maryland would go under with the lawsuits. I have yet to receive a lawsuit with this process in place.

There was heightened interest and heightened complaints for a while but because we went through the public participation process the public slowly understood exactly what an airplane does, why it takes off over their house—people don't realize that they take off into the wind, for example—they realized there was literally nothing I was going to do for a man that lives on the end of the runway, there is absolutely nothing.

Now I think we have something in place that works.

As I was saying the building permits come to my office. We have set up an independent board appointed by the Governor which will permit a variance or the board will permit variances. These variances will be for a single family dwelling in a situation where there is no possible use of a quarter or half-acre lot. Those variances are conditioned upon sound attenuation to the extent it is possible if they are living outside.

Also we purchase easements that permit the right of overflight from the property owner as part of the variance procedure and therefore acquainting any further buyers of that property. For non-State-owned airports the same permit procedure is accomplished by the local jurisdictions. It is obvious that we have misplaced our faith in the Federal Government in terms of the waivers.

We were counting on, and our program was dependent upon the fact that retrofit and more stringent noise regulations were coming onstream over the years. This permitted us to do effective land use planning and local jurisdictions to do effective land use planning in the contours developed in 1980 and 1985. Prior to coming down here I had our people run a computer simulation if there was no retrofit.

I had hoped to have better numbers for you but unfortunately without the retrofit it went off the graph. Our graph that we have is similar to the grid that is on the back of the object you are looking at and has a grid that lays out the land uses and population densities. We did not expand it far enough with this retrofit. Basically we are looking at the LDN 65 to 70 contour, just that

band going all the way around increases by 103 percent, from 3,700 up to 7,700 acres.

Going from 70 to 75, which gets fairly noisy, we go from 1,800 to 3,700 acres. The LDN 75 contour, which is only good for heavy industry, farming, agriculture, and that type of usage, increases by almost 560 percent. To me they are frightening numbers because I am going to have to go back to the communities now and redo our planning process because it is incumbent upon us as a State agency to take those actions.

Mr. FLORIO. You are talking about what would happen if the law were passed?

Mr. SATTLE. If the law is passed in its present form. That is why I was pleased to see the liability provision in there because we had taken our risk, we have gone up front on this and now we turn around and find that the Federal Government is backing off very rapidly.

Mr. FLORIO. I can understand your feeling about not wanting to be on the hook for changes that the Federal Government is now contemplating. All you are doing is shifting the responsibility to a different level. I am not sure what the impact is going to be in terms of reducing noise. I suspect there will be no impact. Given my druthers, I would rather not see the Federal Government more responsible than it is now. However, I certainly think that your argument regarding the inequities of holding the municipalities, counties, and States responsible for 11th hour changes will result perhaps in some liability is a valid one.

I just hope that we are not faced with either of those two options. There was a third option available as well.

Mr. SATTLE. That pretty well summarizes my testimony. Obviously we are advocating that this committee use its jurisdiction under the Noise Control Act to prevent any waivers to the regulations. The obvious course is of course by striking Sections 303 through 306.

[Mr. Sattler's prepared statement follows:]

STATEMENT OF KARL R. SATTLER, ON BEHALF OF THE AIRPORT OPERATORS COUNCIL
INTERNATIONAL

Mr. Chairman and Members of the Subcommittee: I am Karl R. Sattler, Administrator of the Maryland State Aviation Administration, owner and operator of Baltimore-Washington International Airport. I appear today representing the Airport Operators Council International (AOCI). AOCI is the association of governmental bodies that own and operate the principal airports in the United States. AOCI members, such as BWI, serve metropolitan regions which encompass the vast majority of the estimated six to seven million citizens currently subject to aircraft noise.

My remarks today will focus on the provisions of Title III of H.R. 3942, and in particular, its waivers from the 1985 FAR 36 Compliance Regulation.

Federal Aircraft Noise Policy
Relationship Between The FAR 36 Compliance
Regulation And The Noise Control Act

Before commenting on this legislative proposal specifically, Mr. Chairman, I would like to note that AOCI has supported since its publication, and continues to support, full implementation of the 1976 DOT/FAA Aviation Noise Abatement Policy. In particular, AOCI urges, in the strongest possible terms, full realization of the benefits promised by the 1985 FAR 36 Compliance Regulation - benefits that are seriously jeopardized by H.R. 3942 and S. 413 as it was enacted by the Senate.

The DOT/FAA Aviation Noise Abatement Policy was issued, at least in part, under the authority of the Noise Control Act of 1972, legislation over which this subcommittee has primary jurisdiction in the House. As part of that policy, the compliance regulation was issued under Noise Control Act authority as well, and any weakening of its provisions must be available for review, and should be reviewed, by this committee. We applaud you, Mr. Chairman, for recognizing this and taking the initiative to review what we consider to be misnamed legislation that is utterly insensitive to the American public and to the strong Congressional policies enunciated in 1968 and affirmed in 1972.

Furthermore, and equally important from this committee's point of view, H.R. 3942 cavalierly removes EPA from any input to waiver decisions of the FAA. Sections 303, 304, and 305 each explicitly nullify the effect of Section 611(b) of the Federal Aviation Act which requires that EPA be consulted prior to the granting of any waivers from FAA noise regulations. Since enactment of the Noise Control Act, which provided this consultative role, EPA has served the useful function of looking over FAA's shoulder and providing an additional degree of pressure on them to undertake and implement aircraft noise regulation. AOCI believes that EPA's role is very significant in assuring the noise relief promised by the compliance regulation and urges the committee to assure that it is maintained in whatever legislation is reported out of committee.

Current Aircraft Noise Legislative Proposals

The Senate has passed S. 413, the so-called Aviation Safety and Noise Reduction Act. Far, far from encouraging any noise reduction, however, that bill would thoroughly gut the existing aircraft quieting requirements of the FAR 36 Compliance Regulation. The companion legislation, H.R. 3942, being considered by this committee may not appear to be quite so absolute in its destruction of the regulation, but in certain respects it is even worse. H.R. 3942 makes no pretense about enhancing noise reduction beyond the compliance regulation. It simply provides a series of waivers from the regulation's requirements and then casually goes on to revoke completely FAA's authority to issue any noise or other environmental regulations for ten years.

Additionally, I think it is most important to note the legislative context in which the final provisions of H.R. 3942 will be considered. S. 413 contains a variety of very broad waivers from the compliance regulation. So called "good cause" waivers would completely eliminate environmental considerations from any FAA waiver decision. And "new technology incentive" waivers would do no more than reduce the already heavy pressure for airlines to order Stage 3 replacement aircraft being exerted by market forces and the

compliance regulation acting together. Overall, these Senate waivers would undercut the federal promise of noise relief and set the stage for substantial new damage claims against airport operators.

Apart from the blatant environmentally insensitive "good cause" and "new technology Incentive" waivers, the Stevens Amendment, Section 310 of S. 413, would define noisy aircraft as complying with FAR 36 and thereby almost completely eliminate retrofit requirements for 2- and 3-engine aircraft. By itself, this provision obviates more than a decade of research and feasibility studies that established the need for and effectiveness of the FAR 36 Compliance Regulation and - again by itself - reverses 11 years of progressively stronger federal aircraft noise policy.

S. 413 is horrible legislation. Because it is so thorough-going in its removal of existing noise reduction requirements, any House bill that even leans toward relaxation of the compliance regulation will assure a conference version of the legislation that will virtually wipe out noise reduction and turn 180 degrees away from existing federal aircraft noise policy for the foreseeable future.

Viewed in this context, the Title III waiver provisions of H.R. 3942 are irretrievably disastrous. No amount of tinkering or adjustment will make them acceptable to anyone conscious of, or sensitive to, the plight of more than 6 million noise-impacted airport neighbors in this country. These provisions guarantee nothing except increasing aircraft noise levels around airports. And no artfully drafted titles like "Aviation Safety and Noise Reduction Act" or "new technology incentives" will successfully convince us that this legislation is worth taking to the House of Representatives.

Title III Waivers Would Significantly Reduce

Compliance Regulation's Noise Benefits

Sections 304 and 305 of H.R. 3942 each provide significant waivers from the compliance regulation for 2- and 3-engine aircraft. Section 304 would provide complete

exemption from the regulation's requirements for 2-engine aircraft flying between points in Hawaii, apparently to assure continued service to and between small communities. Section 305 would take this Section 304-type exemption and extend it to all 2- and 3-engine aircraft flying between any points in the U.S. If those aircraft were utilized predominately in small communities service. Although the ostensible purpose of these exemptions would be to enhance small community service, their real effect will simply be to carve out and eliminate another section of the compliance regulation for purely economic reasons. FAA's existing administrative waiver process is entirely sufficient to deal with any carrier that can present a valid public interest case for exemption of one or more of its aircraft from the regulation.

Future Federal Aircraft Noise Regulation

Sections 303 and 306 of H.R. 3942 would each go a long way towards hamstringing future FAA noise regulatory efforts. Section 303 would suspend FAA's authority to promulgate a Stage 3 production rule until it reports to Congress 12 months after enactment. It would further require Congressional review of any noise standards proposed by FAA more stringent than its Stage 3 new design aircraft noise standards. Section 306, although apparently intended to achieve a more narrow purpose, would take the further step - noted above - of removing all FAA authority to promulgate or enforce any environmental regulations, from January 1, 1981, until January 1, 1991.

The effect of each of these provisions will be to take a giant step backwards in an area of environmental pollution that has seen too little action already. For the reasons already noted, we must object to these broad policy reversing provisions.

AOCI, therefore, urges this committee - in the strongest possible terms - to strike all of Sections 303 through 306 from Title III of the bill. If any of these provisions remains in the bill, the House members appointed to the conference will probably be unable to salvage any significant part of the FAR 36 Compliance Regulation.

Limiting State/Local Airport ProprietorLiability

In fearful anticipation of just such an event, AOCI strongly supports Section 308 of the bill. By limiting airport proprietor liability to that which exists prior to enactment, at least a minimal recognition of the deleterious effects of this noise legislation will be included.

Airport proprietors are currently solely liable for the damages arising from aircraft noise. AOCI and its members have invariably supported federal action to control and reduce source noise - an area appropriately pre-empted by the federal government. Now that very serious consideration is being given to gutting one of the potentially most effective of those actions, in gross disregard of the cries for help of over 6 million noise-impacted airport neighbors, AOCI believes it is only fair that proprietors be relieved of the burden of legal and financial responsibility for noise increases resulting from the enactment of this legislation.

In no way will this provision deprive any current or future potential noise litigant of his or her right to sue. We believe - and we understand that the Executive Branch concurs - that the 5th and 14th Amendments to the Constitution guarantee, beyond legislative attempts to the contrary, the right to just compensation when a "taking" of property occurs. Therefore, to the extent that liability would no longer attach to airport proprietors, AOCI believes that the most likely responsible party should be - and would be - the federal government. Federal action would deny noise relief, and, if that is to be federal policy, then the federal government should bear the resultant financial burden it imposes.

Furthermore, the amount of that shifted liability should be determined not on noise contours existing today around airports, but rather on those that are promised today by the FAR 36 Compliance Regulation - those that, in 1985, would provide a reduction of perhaps an additional 15-20 percent beyond today's noise contour area.

Title I -- Land Use Compatibility Provisions

Turning to Title I of the bill, AOCI supports voluntary land use compatibility planning programs.

As we have testified in the past, we believe that land use compatibility requires a separate program from the traditional ADAP airport development program. History has shown that, if airport safety and land use compatibility compete for the same too limited funds, the land use compatibility projects are rarely approved. Frankly, this is as it should be because safety expenditures must always get priority. Separate programs with separate financial levels determined by Congress will provide the balance needed between these two priority objectives.

Additionally, AOCI believes that the EPA role provided in the mandated actions of Title I in H.R. 3942 is adequate and appropriate to assure both reasonable compatibility criteria and specific airport programs that will increase noise compatible land use in airport environs.

In conclusion, Mr. Chairman, AOCI objects most strenuously to any waivers from the FAR 36 Compliance Regulation and urges that they be stricken from this bill. Furthermore, any bill that is reported to the floor must include maintenance of EPA's consultative role and the Section 308 limitation on airport proprietor liability.

Thank you.

Mr. FLORIO. Just one question. A number of other countries have landing fees which are levied based upon the noisiness of the airplanes approaching the airport. Is this something that anyone has considered introducing to the United States? Are you familiar with the existence of this procedure?

Mr. CORBETT. Yes. In some of the European countries where the national government tends to have a heavy proprietary role on the airport there is a relationship with the airlines where the airlines pay what the government imposes so that they have more power vis-a-vis the airlines than we do have in the United States where a lot of communities need the air service.

A number of communities have looked into the noise differentiated landing fees. The airlines serving the airports refuse to enter into negotiation with that as a basis. So the options are available in some communities looking into them as to imposing those kinds of landing fees by ordinance since clearly they can't be negotiated if the airlines don't want to negotiate on that issue.

Mr. FLORIO. Is there any question as to the legality of local ordinances in the sense that the Federal Government is not arguing that the field is preempted by virtue of FAA regulations?

Mr. CORBETT. The practical problem of putting those into effect is that there are a lot of contracts entered into for 30 or 40 years with the airlines. It is very difficult for a municipality to abrogate those contracts and start putting something in the contract based on proprietary power. I think there is a recognition, particularly in view of the legislation before this committee, that to the extent that the Federal Government backs off on what it had promised to do in terms of source noise, that the communities will have to look more deeply at all alternatives, including financial, to try to put pressure on the airlines if that pressure is removed by the Federal Government.

Mr. FLORIO. There is a reasonable assumption that if the Federal Government did back off, we might take a more serious look at this type of situation.

Mr. CORBETT. All our members are limited by long-term contracts that are in place. Before you have an option to renegotiate a contract you also have pressure from communities for curfews which is a local nonproprietary response when they find out that Government and industry are not doing what they expect on noise. So that kind of pressure will come up before there is financial pressure on the landing fee.

Mr. FLORIO. Thank you very much.

We have another vote. We will take a recess and come back at which time we will hear our last witness, Mr. Herman Barnard. [Brief recess.]

Mr. FLORIO. Our final witness this morning is Mr. Herman Barnard, president of the National Organization to Insure a Sound-Controlled Environment and city councilman of College Park, Ga.

We welcome you to the committee. We will ask you to introduce your colleagues for the record.

STATEMENT OF HERMAN BARNARD, PRESIDENT, NATIONAL ORGANIZATION TO INSURE A SOUND-CONTROLLED ENVIRONMENT, ACCOMPANIED BY WILLIAM FERGUSON, EXECUTIVE DIRECTOR, AND JOHN TYLER, TECHNICAL CONSULTANT

Mr. BARNARD. Mr. Chairman and committee members I am Herman Barnard, president of the National Organization to Insure a Sound-Controlled Environment—NOISE. I am also city councilman of the City of College Park.

On my left is Bill Ferguson, executive director of the NOISE organization in Washington. On my right is John Tyler. He is a NOISE technical consultant and for many years, I might add, he was employed with the Pratt Whitney Aircraft Engines Manufacturing Co. in charge of the aircraft noise research and development department. So, he is a very technically capable person. We rely on John to a great extent to advise us on technical matters.

Let me proceed by saying NOISE is an organization of more than 40 communities across the country which share a common problem, jet aircraft noise. For the most part, these cities and counties are not airport operators. They are generally consumers of aircraft noise.

I would like to make one point at the beginning. Noise is a problem for people. It is not an institutional or organizational problem. Manufacturers are concerned, airlines are concerned, air-

port operators are concerned, we here today are concerned because people are being affected. If we lose sight of the purpose we are here for, it is very easy to slip into discussions of logistics or of finance or of corporate planning which do not relate to the problem, only to how institutions want to deal with it.

The effects of aircraft noise change people's lives for the worse. We can document, as we have, destructive social and economic effects on noise-impacted communities. We have begun to document those effects in terms of health. Recent studies of mortality rates and the incidence of birth defects in heavily noise-distressed areas, for instance, are alarming. Statistics always have an impersonal effect, though. Let me suggest a hypothetical example. If this committee's rules were changed, for some reason, to compel 1 minute of silence for every 3 minutes of speech and those rules insisted that silence be imposed absolutely and without regard to where we were in a sentence or a discussion, we would find it nearly intolerable. Manners, good order, progress, information, and the public business would be so disrupted that participants would become angry and frustrated and would use words like tyrannical and arrogant to describe such a rule.

Luckily for us here today, my example is hypothetical. But aircraft noise does exactly this to those who live in the midst of it. Every aspect of their lives is subject to arbitrary suppression; education, business, government, entertainment, even the privacy and activity of families presumed secure in their homes.

Aircraft noise, you will agree, needs to be abated. I am happy to comment on the proposed legislation with the knowledge that we have a common purpose.

Section 102 provides a mission and a time limit for FAA to set an airport noise measurement system, a human impact measurement system and a list of noise compatible land uses. NOISE is supportive of FAA's current efforts in this direction and encourages the legislative action which prescribes this as a formal mission and expedites it.

In the noise and impact measurement field, there is a distinction that is easy to miss but is very important. Measurement of the amount or degree of noise is a function of quantity. Exposure, similarly, can be measured. Standards, however, are a qualitative judgment. They speak not of how much but of how much is acceptable. Defining a standard of measurement is a very different thing from deciding what is acceptable or good.

The point of this explanation is that the Environmental Protection Agency has the primary mission within the Government to evaluate the effect of noise on people. The priority should be recognized in the deliberations of this committee. If the task given to FAA in section 102 is seen to extend to evaluation as well as measurement, then the role of EPA should be made more explicit than " * * * after consultation with such Federal, State, and interstate agencies as he deems appropriate * * *" either in the language of the section itself or in the committee report, I urge that you make it very clear that EPA has an integral, if not controlling, function in determining any standards of acceptability of noise and noise impact.

NOISE agrees with the Department of Defense that the existing measurement and reporting system developed by EPA for aircraft noise is useful and effective. Adoption of this system by FAA would save considerable time, effort and money in Federal R. & D. Perhaps more to the point, a great number of surveys and plans have already been developed using this system, both by DOD and local airports. Any significant change in the measurement system will tend to negate this.

NOISE approves the plan requirements and grant authorization of section 104 as a worthy approach to investigation of the effects of noise. While not addressing the problem of aircraft noise at its source, it does give us tools to deal with some of its effects. I would suggest some improvements to the language of the bill.

Subsection 104(a)(1)(c) would authorize the soundproofing of public buildings. NOISE recommends that this be changed to authorize the soundproofing of any building. This would be done in conformance with aircraft noise impact standards based on the noise measurement and impact determination systems discussed in section 102 of the act. The simple fact is that a given noise is just as loud in a private building as in a public one. People are impacted just as much. In business establishments, the impact of noise is an added economic cost. Imposing that cost on the recipient of the noise, rather than its originator, directly contradicts the logic upon which this bill is based.

Where noise is a disrupter of family and home life, there are indirect measures of economic value lost. More important, the impact of noise interferes with family life. As I suggested earlier, tension, upset, anxiety and anger all accompany excess noise affecting people. When they live in noise affected areas and can't get away from the sound, this condition becomes chronic and is translated into plain unhappiness, family and social problems, and, as we are beginning to find out, psychosomatic and organic illness. Soundproofing in such affected homes would be only a first approach to equity.

The indirect measures of economic devaluation of noise-affected residential areas are often expressed by property values. Another effect we are seeing is neighborhood deterioration. Diminished attractiveness and value lead to lack of maintenance and care. This is a self-reinforcing cycle, once started. Rundown neighborhoods are the ones that low-income families are heir to. Their lack of ability to maintain or rehabilitate houses results in a neighborhood which demands extensive public resources in personal and family services, in public facilities and in community development programs. These services are very, very costly. And when they can be traced to a cause like airport noise, the distinction between public and private costs is lost. A noise ridden private home may be today's private problem; it is tomorrow's public expense. We recommend language which would assist the soundproofing of buildings, public or private, which meet designated standards of noise distress and are included in noise compatibility plans.

The fact that aircraft noise is an economic cost is not disputed. One expression of the cost is the price of "fixing" it. This is variously estimated at between \$50 and \$60 billion. The principle by which we view this is that the people who suffer the effects of noise

should not be the ones to pay the costs, but rather those who benefit by it. In the long run this is the airline passenger.

NOISE suggests that this principle be applied. We recommend that 2 percent of the airline ticket tax be earmarked to pay for noise compatibility plans and projects. Specifically we recommend the authorization of \$10 million in fiscal year 1980, \$15 million in fiscal year 1981, and \$20 million in fiscal year 1982, for the development of noise compatibility programs by airport operators in conjunction with noise impacted local governments. We further recommend that \$200 million be authorized for each of fiscal years 1980, 1981, and 1982 for noise compatibility projects. This amount is not intended to meet the need for noise compatibility projects, especially for redevelopment of noise affected areas. It is intended to act as a pilot program to promote the participation, among other things, of nonairport sponsors with land use jurisdiction in areas around airports.

The authority for this is in the bill as reported by the Public Works Committee and is significant. Land has in many instances already been purchased by airport sponsors for noise alleviation purposes, as you know. The consistent fate of such land has been to lie fallow. In the urban areas where such purchases are made, land is a precious commodity. More productive use of it should be made.

Light industrial uses, often airport associated, are noise compatible and contribute significantly to economic development of often distressed areas surrounding major airports.

Airport operators are not economic development agencies, except in the immediate sense of aviation activities. Cities usually are. They have the capability of designing an economic development plan for a noise distressed area, of assembling land, of providing zoning, streets, water, sewer and utilities for industrial activities. They can market such industrial areas. This potential has not been tapped. It should be. The authority is in the act. The authorization needs to be put in place, too.

The noise compatibility plans which will be developed under this bill will give us the data to research for the first time what the things are to solve the noise abatement and land use problems around airports. It is necessary that we perform that research so that we can group both the nature and the size of the problem. NOISE recommends that the Secretary of Transportation be directed to undertake an 18-month study to define and analyze the various elements and costs involved in a national noise compatibility program.

The magnitude of the national noise compatibility program is directly related to the existing noise requirements for aircraft. If they are waived or relaxed there is going to be more aircraft noise over wider areas at each airport for a greater number of years. Intensity, size of footprint and time are all factors which add to the economic penalties of noise.

NOISE as an organization categorically opposes any part of title III which would tend to waive or relax existing noise standards.

We do so not primarily because of the cost of noise, but because of its effect on people. Aircraft noise has been, is and remains a problem because of its effects on people. It is often made to seem that the problems are financial or logistical. They are not; they are

individual problems. If waivers or relaxation of standards deal with the human problem at all, it is to intensify and extend it.

If there are valid reasons for delay in compliance, the Secretary of Transportation already has the authority to grant limited waivers. The effect of title III is to broaden the basis for such waivers. There is also a clear message that the Congress looks with favor on them and would not find relaxation of compliance requirements untoward. Mr. Chairman, I respectfully recommend that the waiver provisions of this bill not be included in the final version.

There is one step that could be taken which would be positive and would not involve limitations on anyone. Compliance with aircraft noise standards is a public matter. This bill is evidence of that. The matter of compliance is also a public issue as witness the proposed waiver provisions. NOISE recommends that the bill institute a requirement for a compliance plan by aircraft operations whose equipment is affected by FAR 36. The bill should authorize the Secretary of Transportation to publish regulations governing the times of submission and content of such compliance plans. The purpose of compliance plans would be to bring the intentions of aircraft operators to light so that they can be analyzed for practicality and "do-ability." It would make a difference, for example, to know whether and when valid attempts to order equipment will be made and whether realistic lead times are being used. These "hows" of compliance will determine the fact of compliance. Knowing such facts will make the committee's oversight tremendously more effective in accomplishing the purposes of the Aviation Safety and Noise Abatement Act of 1979.

In summary, NOISE supports title I with some changes and additions. NOISE must strongly oppose any proposed version of title III.

Thank you for this opportunity to appear and to present the viewpoint of many of those whom noise affects. I hope that the ideas presented are useful to you.

Mr. FLORIO. Thank you very much.

Mr. Madigan.

Mr. MADIGAN. One of the difficulties in being a Member of Congress is that you have to try to understand a lot of very complex things on relatively short notice. I have been trying to understand some of what has been said to us this morning. I would like if I could to see if you could help me get a little familiar with the nomenclature. Am I correct in saying that runway 22 represents the 220° point on a 360° circle? Do you know the answer to that?

Mr. BARNARD. No, sir, Mr. Madigan. I brought Mr. Tyler along with us. He is our technical man. Maybe I could refer this to him.

Mr. MADIGAN. Is that a correct assumption?

Mr. TYLER. Runway 22 means the runway is headed in the direction of 220° from north, going clockwise.

Mr. MADIGAN. So that is a runway that runs in a northeast-southwesterly direction?

Mr. TYLER. That is right. Runway 22 runs northwest. In the opposite direction it would go southeast.

Mr. MADIGAN. The points on the compass are 90° and 180° which would be due south?

Mr. TYLER. I am sorry, southwest is correct.

Mr. MADIGAN. Northeast and southwest.

Mr. TYLER. Right.

Mr. MADIGAN. What does left and right mean?

Mr. TYLER. If you have parallel runways, the runway to the right is, say, 22R and the one on the left is 22L, as you face in the 22 direction.

Mr. MADIGAN. That runway would be chosen by the tower as the runway upon which a plane should land or take off, depending on the way the wind was blowing?

Mr. TYLER. If the wind velocity is strong enough to be a factor this may be a determining factor, but if the wind is less than 5 knots, airplanes can land in either direction.

Mr. MADIGAN. What is the other runway normally available? Is it at 290°?

Mr. TYLER. It must be 14, is that right? Runway 14. The total is 360°.

Mr. MADIGAN. There is a runway 29 I think at O'Hare, so that would be 290°?

Mr. TYLER. That is right.

Mr. MADIGAN. Then if a plane uses runway 22 I am assuming that the wind is blowing down that runway?

Mr. TYLER. Well, if the wind is strong enough, then you can assume it is coming from the southwest.

Mr. MADIGAN. The prevailing wind normally blows from west to east, is that correct?

Mr. TYLER. It depends on the part of the country. If you are in the northeast part of the country most of the wind comes from the northwest.

Mr. MADIGAN. The direction, if you are on runway 22, whether you take off in a northeastern direction or a southwesterly direction, if you have parallel runways, presumably would depend on which way the wind is blowing because you want to take off into the wind and land in the wind, is that correct?

Mr. TYLER. Again assuming that the wind velocity is high enough to be significant.

Mr. FLORIO. If the gentleman will yield for some clarification, I think Mr. Madigan phrased it, you want to take off into the wind.

Mr. TYLER. Yes.

Mr. FLORIO. You take off into the wind?

Mr. TYLER. That is right.

Mr. MADIGAN. It gives you lift under the wing.

From your technical experience in what percentage of takeoffs and landings is the wind actually a factor?

Mr. TYLER. A relatively small percentage.

Mr. MADIGAN. So that it could be possible to have a runway designed on the compass point in such a manner that planes could be taking off in a direction away from the populated area all the time unless the airport was completely surrounded by a built-up area?

Mr. TYLER. That is correct.

Mr. MADIGAN. Airports are not designed that way at all.

Mr. TYLER. The tower of an airport would prefer to have takeoffs into the wind and landings into the wind no matter what the wind

velocity, just assuming that the wind may be a variable and at times it may be high enough such that the airplane must take off in the wind or land in the wind, and at other times it doesn't matter. It is easier for the tower to follow some fixed pattern.

Mr. MADIGAN. But that whole fixed pattern could be changed in 95 percent of the flights?

Mr. TYLER. That is correct.

Mr. MADIGAN. I suppose then the question I want to ask is why is it laid out that way in the beginning if the wind is not a factor in 95 percent of the flights? Just to insure there is some uniformity across the country?

Mr. TYLER. I wouldn't say 95 percent. It depends on the windrose for that particular location. You are familiar with the windrose. It tells you what the strength is and the direction. I am not familiar with the windrose for the Atlanta airport. Ninety-five sounds like a rather high percentage, just offhand.

Mr. MADIGAN. We have had testimony this morning that with regard to the two-engine aircraft, the DC-9 type aircraft, that no one is building a plane that would enable the owners of present DC-9's to be assured that they would be able to buy an airplane that might meet a fair standard of noise control technology.

Apparently there is no engine development of that kind going on by any of the engine manufacturers. Does that information concur with what you know about developments?

Mr. TYLER. There is considerable interrelation between the engine manufacturers' plan to develop an engine with particular characteristics and the requirements laid down by the FAA for operations in the future. As you may know, during the last 2 decades the aircraft industry, particularly the air carrier operators, has used engines with higher and higher bypass ratios.

The first generation of aircraft were straight jets; then there was the low bypass ratio, and then high bypass ratio. We are now getting in the new airplanes to be developed during the 1980's of still higher bypass ratio.

Now, this process normally would be continued and the research and development work in this field indicates that there is a significant improvement in engine performance, not only in fuel consumption but also noise reduction available from engines with still higher bypass ratios.

These engines would be called prop-fan engines, whereas, in the current high bypass ratio type of engine you find an engine inlet that is very large relative to the turbine size.

As you may remember, the wide-bodied jets—you can see a man standing up in the inlet with the top still above the top of his head. You take another step and you go to essentially a propeller and you replace the fan with a rotor which is larger in diameter and this next step becomes a turbine engine driving a propeller.

Now, the prop-fan development, let us say, has been in embryo for several years now; it is something that could be made available to air carriers, general aviation aircraft, and probably the first engine will be relatively small in size. They would have considerable advantage over any of the present engines that power, let us say, the DC-9's, 727's, 737's or the smaller general aviation aircraft.

Now, these engines will be brought into production when there is a requirement to meet lower noise standards or when the manufacturers feel that it is worthwhile to buy a new model to obtain the benefits of lower fuel consumption.

Mr. MADIGAN. This would be a turbine engine powering a propeller?

Mr. TYLER. That is right, called a prop-fan.

Mr. MADIGAN. The propeller would be located inside the engine hull?

Mr. TYLER. No; it would not be a shrouded propeller. Well, the models which have been experimented with over the last 2 or 3 years have been unshrouded propellers.

Mr. MADIGAN. Is there a higher level of vibration generated through the fuselage of an airplane from that kind of engine?

Mr. TYLER. The mounting of the propeller and gearbox becomes an additional problem as far as the powerplant installation is concerned. It is not a new type of problem. Of course, we have had propeller airplanes in the past and we have developed considerable expertise in that area; so it is not something that looks to be formidable.

Mr. MADIGAN. Automobile engines are identified in terms of horsepower or cubic engine displacement. In the jet aircraft engine, is the identification there pounds of thrust?

Mr. TYLER. That is correct.

Mr. MADIGAN. The 727-type aircraft has two engines mounted on the fuselage on the side and one on the top. The DC-9 has two just on the sides of the fuselage. Expressed in pounds of thrust, what is the difference between the side-mounted 727 engine, the side-mounted DC-9 engine, and the wing-mounted 707 engine?

Mr. TYLER. When you bring in the 707, you are now going back to the lower bypass ratio—I am sorry—

Mr. MADIGAN. There is a newer 707 engine, isn't there?

Mr. TYLER. I don't believe so. I believe you are thinking of the retrofitted DG-8's which have been ordered by United.

Mr. MADIGAN. The original 707 had an engine similar to what we find on the older military KC-135 tankers?

Mr. TYLER. That is correct.

Mr. MADIGAN. Those are noisy, smokey, very fuelinefficient engines?

Mr. TYLER. Those are straight jets.

Mr. MADIGAN. I am under the impression there are newer engines on 707 aircraft than that.

Mr. TYLER. Yes. The next version was the low bypass ratio engine.

Mr. MADIGAN. I am interested, if you are telling me what that 707 engine—what the number would be for pounds of thrust with the 727 engines on the side and the DC-9 engine.

Mr. TYLER. The thrust rating of the various engines in the 707?

Mr. MADIGAN. Approximately.

Mr. TYLER. They have gone through a series of increases, starting out in the middle teens—15,000, 16,000, 17,000, 18,000, 19,000 pounds thrust, and then have come into the early 20,000's.

The replacement for those engines in the United order was the G.E. engine and was still a higher thrust rating. But the JT3D is

the model that powers the 707 through the various stages; the "D" is the bypass ratio engine and is the one that has come up to—I think 18,000-pound thrust rating was its maximum during the final production period.

Mr. MADIGAN. Can you give me the rating on the 727 engine and the DC-9 engine?

Mr. TYLER. The 727 is a JT8D, which started in the lower teens—13,000-, 14,000-, 15,000-pound thrust, and is now up in the range of what the JT3D had during the latter part of the 707 production.

Mr. MADIGAN. How about the DC-9?

Mr. TYLER. The latest DC-9—you heard about the -80 airplane this morning—has a JT8D-109, which is a higher thrust rating and a slightly higher bypass ratio than the earlier models of that engine in the 727 and the DC-9's.

Mr. MADIGAN. That engine is capable of being used interchangeably in those airplanes?

Mr. TYLER. No, it is a larger fan.

Mr. MADIGAN. This is on the DC-9-80?

Mr. TYLER. Yes.

Mr. MADIGAN. Which I assume to be some kind of airplane different from the 105 DC-9 that I ride on most of the time.

Mr. TYLER. Yes.

Mr. MADIGAN. How is it different? Is it a bigger airplane?

Mr. TYLER. We have a Douglas representative here who could quote you the number of passengers. I am not familiar in detail with the exact number.

Mr. MADIGAN. The DC-9 stretch that you are familiar with, that the regional air carriers buy, what would be the pounds of thrust rating for the engine on that aircraft?

Mr. TYLER. I can't quote you an exact figure. I would guess in the order of 20,000 pounds.

Mr. MADIGAN. So, all three of those airplanes have engines that are somewhat similar—

Mr. TYLER. That is right.

Mr. MADIGAN. In terms of pounds of thrust?

Mr. TYLER. That is correct.

Mr. MADIGAN. Thank you for thoroughly confusing me.

The question that is begged at that point is, why is the statement made that technology on engines for one kind of aircraft is not available, and it is available for another kind of aircraft when the engines seem to be very much the same in terms of their performance?

Mr. TYLER. As I mentioned earlier, engine manufacturers develop engines for a market. If they can see the market, they will put the money into the development, make the engine available to the airplane manufacturers who, in turn, will put it in an airplane and sell it to airlines and general aviation customers.

The market is frequently a function of what the requirements are for any particular period of time.

You heard stated here this morning that the FAA has no plans for bringing out a stage IV FAR 36 set of noise limits. I am sure at this point their explanation that the technology has not crystallized to the point where they can set these limits is their particular thinking.

On the other hand, the FAA could very well look at the technology available and say that the next generation of aircraft should meet certain noise limits and thereby guide and direct the manufacturers to bring out engines which would meet those limits.

NASA has information at the present time as to what a prop-fan could do, for example, at different sizes.

Mr. MADIGAN. Mr. Chairman, I got into this just far enough where I need a couple of days to think about it.

Mr. FLORIO. Thank you very much.

At the risk of simplifying what you have said, would it be a fair statement to say that as long as hope is being held out to the airlines for waivers, the airline manufacturers will have less of a prospective market?

To put it a different way, to the degree that waivers are not being considered and there are built-in requirements that have to be adhered to, the result would be the creation of an inevitable market that might accelerate the airline manufacturers' inclination to start developing some of the things you have talked about.

Mr. TYLER. Absolutely.

Mr. FLORIO. Mr. Tyler, I have been very impressed with not only your expertise, but also your willingness to come forward and provide us with the information. If you do not find any objection to this, I would like to submit some questions to you that we would appreciate your answering, so that we can start to develop some of the points that you brought to us.

As Mr. Madigan indicates, we are at a great disadvantage in not having the benefit of some of the manufacturers' expertise. We are hopeful that we are going to get the expertise voluntarily, and we may, if we don't get that sort of cooperation, insure that the expertise is available to us.

In anticipation of having the help of the airplane manufacturers, we would like to submit some questions to you to expand our degree of knowledge so we can ask the manufacturers the appropriate questions when they get here.

If that would be acceptable to you, I would like to submit questions to you in the next day or two, and we would appreciate your help with them.

Mr. TYLER. Fine.

Mr. FLORIO. Gentlemen, we thank you very much. We appreciate your cooperation.

Mr. BARNARD. Thank you, sir.

Mr. TYLER. Mr. Chairman, there is a point or two that I would like to bring up with regard to the testimony presented earlier today. One of the points that received a great deal of discussion pro and con had to do with the amount of noise level difference in airplanes which an individual might recognize.

Now, I have been chairman of industry committees that have spent several years studying the problem, and I would like to give you a little benefit of the work of these committees.

The question as it was discussed earlier this morning had to do with specific flight tests of individual airplanes and groups of people standing at certain locations listening to these airplanes and having the reaction of these individuals as to whether they could or could not tell the difference between airplane A and airplane B.

What I would like to suggest is that a much more concrete set of evidence is available to the committee from work which was done by the EPA as a result of the Noise Control Act of 1972.

EPA was instructed to determine levels of noise requisite to protect the public health and welfare. In this activity, the EPA collected information from dozens of different studies along this line that had been made in cities all over the United States, in fact, in cities all over the world.

Many of the studies were conducted in London, Paris, Brussels, in various cities in Germany, studies made in South Africa, studies made in other countries; and when you plot all of this information together on a chart in terms of—in this case—noise exposure forecast, which is a composite impact unit, including the noise from all of the airplanes passing over an individual house during a 24-hour period, it has been found that these data indicate that people living underneath paths can react to differences of 1 decibel or 1 unit of NEF which is a composite indicating that the noise level following that particular flight path changed by 1 decibel.

Now, this is a reaction which is dependent on many factors, of this individual's experience through a 24-hour period, including the daytime, the evening, the nighttime; and as a result of these studies the weighting of aircraft noise, daytime, as compared with nighttime, has been evaluated and the proper weighting factors applied and, in fact, we have had different weightings.

California has State weighting which includes an evening period in addition to the daytime and nighttime periods.

The interesting factor is that of the thousands of people involved in these studies, when you plot the composite curve you find there is a very specific reaction of these people to very small increments of noise impact.

Now, I would like to just refer you to a table which was prepared by the FAA in connection with the FAR 36 requirement calling for retrofit of two- and three-engine airplanes, and retrofit or replacement of four-engine airplanes.

This is a report of the House of Representatives that was Glenn Anderson's committee, the Aviation Subcommittee of the Committee on Public Works and Transportation.

The table that I referred to is on page 12. You may well have studied this table, since this was one of the very early reports on this particular bill. This was in the year 1977. The bill did not pass that year; in fact, it did not pass in 1978 either; but this table shows that in the year 1975, with the fleet of aircraft operated by U.S. air carriers, the area value of the land impacted by noise above 30 NEF, which is the limit considered acceptable for residential use, was \$60 billion.

Mr. Barnard mentioned this in his testimony. The FAA estimated that by 1985, if this retrofit replacement program did not occur, the value of the land within the 30 NEF contour would drop down to about \$57 billion.

If the retrofit of two- and three-engine aircraft was accomplished only, and nothing was done to the four-engine airplanes, the value of the land within that contour would drop to \$49 billion.

If the whole program—including the four-engine aircraft—were implemented, the value of that land would drop to \$37 billion.

Now, this gives you an indication of the value of doing the retrofit on two- and three-engine aircraft, the value of making the changes in the four-engine aircraft.

Now, you can see here that as a result of this program which the FAA established in its regulation, the area impacted by unacceptable noise would be reduced to 50 percent of its original value as a result of these two steps.

This is really the most important thing I wanted to bring to your attention. I had some comments on takeoff and approach affected by the different retrofits, but I don't want to continue the hearing beyond your endurance.

Mr. FLORIO. We appreciate what you have said, and we do have access to the study you have made reference to. We found it particularly important and interesting as well because, as we stated to one of the prior witnesses, the concept of cost has to be an evaluation of cost over and above the direct dollar output to retrofit the airplanes.

If we are talking about \$200 million to \$250 million for the retrofitting, when we balance the magnitude of what you are talking about in terms of land costs and lost property values, it becomes much more cost efficient to start talking about retrofitting.

So we appreciate what you have been able to bring to our attention on this last point.

What I would like to do is say that we go to work immediately on framing some questions that we will submit to you in writing. We would appreciate your views on these questions. You might be in a position to assist us when we hear the testimony of the aircraft manufacturers before the subcommittee.

Mr. TYLER. Very good.

Mr. FLORIO. We thank you very much.

[Whereupon, at 1:05 p.m., the hearing was adjourned, to reconvene subject to the call of the Chair.]

AVIATION SAFETY AND NOISE REDUCTION ACT OF 1979

WEDNESDAY, JUNE 27, 1979

HOUSE OF REPRESENTATIVES,
SUBCOMMITTEE ON TRANSPORTATION AND COMMERCE,
COMMITTEE ON INTERSTATE AND FOREIGN COMMERCE,
Washington, D.C.

The subcommittee met, at 9:30 a.m., pursuant to notice, in room 2218, Rayburn House Office Building, Hon. James J. Florio, chairman, presiding.

Mr. FLORIO. The subcommittee will come to order.

Ladies and gentlemen, as I am sure you all know, we are beginning our third and final day of hearings on H.R. 3942, the Aviation Safety and Noise Reduction Act. We have had 2 days of very interesting hearings on this bill.

I am still convinced that the bill has extreme difficulties. The testimony we have heard to this point indicates to me that the FAA noise regulations, which have been in existence and can be reasonably phased in, should not be deviated from. Notwithstanding that, we have testimony today from which we are hopeful to receive some insights as to how we might improve the bill that is before us.

Witness after witness has testified before the subcommittee as to the harmful effects that continuous exposure to aircraft noise brings to individuals and communities surrounding airports. The Federal Government has made a commitment to bring some degree of relief to these individuals and communities. I think it would be inappropriate for us to break faith with these communities which have relied upon the efforts which have been put forth up to this point.

The Commerce Committee has the responsibility of acting upon public health and environmental measures related to aviation noise. In the next few weeks this subcommittee will be looking at ways to improve, if at all possible, this piece of legislation so we can report it to the House in such a way that the House will have an opportunity to take several approaches to the basic thrust of the bill as it was reported out of the Public Works Committee.

We are hopeful that today's witnesses will be able to provide us with some useful insights into this entire area.

I would express my appreciation to the witnesses who are here today for their anticipated cooperation. I have had the opportunity to read through all of the testimony that has been provided to us in advance and we are appreciative of that consideration. There-

fore, we will go right to the witnesses today who comprise a panel of industry representatives.

This panel will be comprised of Mr. Gordon A. Titcomb, executive vice president, Commercial Products Division, Pratt & Whitney Aircraft Group; Mr William L. Rodenbaugh, manager of General Electric Co.; Vaughn Blumenthal, director of noise and emission abatement programs of Boeing; Mr. Aubert McPike, director of McDonnell Douglas, and Mr. Karl Harr, president of the Air Space Industries Association.

Gentlemen, I would appreciate your coming forward and proceeding as you see fit.

STATEMENTS OF KARL G. HARR, JR., PRESIDENT, AEROSPACE INDUSTRIES ASSOCIATION OF AMERICA, INC.; VAUGHN L. BLUMENTHAL, DIRECTOR, NOISE AND EMISSION ABATEMENT PROGRAMS, BOEING COMMERCIAL AIRPLANE CO., ACCOMPANIED BY RICHARD E. RUSSELL, CHIEF ENGINEER, NOISE TECHNOLOGY STAFF; AUBERT L. McPIKE, DIRECTOR, INDUSTRY ASSOCIATION ACTIVITIES, DOUGLAS AIRCRAFT CO., McDONNELL DOUGLAS CORP.; WILLIAM L. RODENBAUGH, MANAGER, ADVANCED STRATEGIC MARKET AND PRODUCT PLANS DEVELOPMENT, GENERAL ELECTRIC CO.; AND GORDON A. TITCOMB, EXECUTIVE VICE PRESIDENT, COMMERCIAL PRODUCTS DIVISION, PRATT & WHITNEY AIRCRAFT GROUP

Mr. HARR. I am Karl Harr, president of the Aerospace Industries Association of America, representing the Nation's major manufacturers of transport aircraft and related components and avionic equipment.

Between us we have introduced the panel with me here who comprise in general terms the heart of the technology of the aerospace industry on the subject of these hearings.

My statement is so brief perhaps I might just quickly read it into the record and then proceed in any way that you wish.

We welcome the interest of this subcommittee in the problem of airport noise. It is one which the aerospace industry has wrestled with for years and which we will continue to attack to the best of our technological and financial ability.

However, before we attempt to answer your questions, I would like to place the aircraft noise problem in historical context and make a few general comments about H.R. 3942 as it was reported by the House Committee on Public Works and Transportation on May 15, 1979.

As many of you are aware from personal experience with your constituents, aircraft noise has become an increasing problem over the past 25 years. It is estimated that over 7 million Americans may be affected by aviation-related noise. Federal agency action on aircraft noise, to date, has concentrated on controlling noise at the source, meaning the aircraft. Part 36 of the Federal Aviation Regulations prescribing noise levels for civil turbojet aircraft was promulgated in 1969.¹ From then on, no new aircraft could go into

¹ The stages of aircraft noise levels were established by Amendments 7 and 8 to Part 36 of the FAR.

production unless they met these regulations. Since 1969 there have been 10 amendments to part 36, extending its applicability to additional categories of aircraft and lowering the allowable noise levels.

In short, the rules have been changed rapidly. While this may be proper and understandable from the standpoint of promoting the public well-being, such actions constitute, for the operators and manufacturers, a severely challenging and often confusing framework in which to conduct their business. I should interject here that despite these difficulties, the manufacturing industry intends to reduce noise to the maximum extent possible and we have made considerable progress toward that end already. All new model airplanes now being designed will meet stage 3.

When the FAA passed its rule requiring that operators bring their aircraft into compliance with FAR 36 by 1985, three-fourths of the U.S. fleet was affected. That is, 1,643 out of a total of 2,193 airplanes in the U.S. fleet did not meet FAR 36 and have to be retrofitted, reengined, or replaced to meet the FAA's noise rule.

Bringing three-fourths of the fleet into compliance obviously will be an expensive and challenging project. While we maintain that last year's airline profits do not constitute an adequate long-term source of the funds which will be required, we recognize the political realities which dictated abandonment of financing mechanisms contained in earlier noise bills. H.R. 3942, while perhaps not as desirable or as effective in controlling noise as earlier proposals which placed long-term emphasis on replacement of noisy aircraft will, if enacted, remove some of the uncertainty which surrounds this issue. Therefore, we support the bill and, in so doing, the health and safety of the American flying public as well.

Thank you, Mr. Chairman. That completes my statement.

Perhaps the other statements go into depth on some of the technical questions which we think you are interested in and we will proceed with them if we may.

Mr. Blumenthal of the Boeing Co.

STATEMENT OF VAUGHN L. BLUMENTHAL

Mr. BLUMENTHAL. Mr. Chairman and members of the Transportation and Aviation Subcommittee, my name is Vaughn Blumenthal. I am the director of noise and emission abatement program of the Boeing Commercial Airplane Co.

I have with me Richard E. Russell, chief engineer for noise technology of the Boeing Commercial Airplane Co. As you may know, I testified at Congressman Anderson's Public Works and Transportation Committee hearings on various noise bills on May 1, 1979. A number of our basic positions were stated in that testimony and have not changed. We are acutely aware of the need for quieter airplanes and, consequently, have spent and are spending millions to reduce noise.

Footnotes continued from last page

Stage 3 represents the required performance of new aircraft for which the type certificate application is made on or after November 5, 1975.

Stage 2 is the performance established by the original Part 36 of FAR which was effective on December 1, 1969. Additionally, Stage 2 applies to those aircraft which were originally exempt but have continued to be manufactured. Such aircraft which were not flown prior to December 1, 1973, or December 31, 1974, depending on special conditions, must meet these requirements.

Stage 1 aircraft are those which do not meet the requirements of either Stages 2 or 3.

NOISE RESEARCH

We have maintained an aggressive program of pursuing development and application of meaningful and cost-effective noise reduction technology for our commercial jet aircraft family. Our concern for the airport community noise problem is dramatically demonstrated by the heavy investment made toward its solution in terms of facilities, manpower, research and development expenditures, and product improvement.

The attached chart lists the Boeing research and development expenditures in aircraft noise reduction activities. The figures are in millions of dollars. We see that over the last 20 years Boeing has spent around \$100 million in independent research and development (I.R. & D.) funds, plus about \$40 million for noise reduction work associated directly with production airplane programs, and a further \$17 million for capital expenditures for acoustic laboratory facilities, for a 20-year total of more than \$150 million. In addition, Boeing has received about \$55 million in Government moneys for aircraft noise reduction research and development.

One thing gives us some cause for concern. That is the apparent reduction in Government expenditures which we believe reflect the action toward the problem as a whole, not just with Boeing alone. Those reduction numbers we think are fairly serious in view of the pressure that there is on the industry as a whole to reduce the airplane noise.

Mr. FLORIO. Government expenditures in what general area?

Mr. BLUMENTHAL. Basic noise reduction research. The total dollars expended when the capital facilities and production airplane work are included is over \$200 million. Similar expenditures have been made by other segments of industry. For us alone this is an average of over \$10 million a year. The yearly manpower involved in noise reduction activities has been substantial, averaging during certain of these years over 750 engineers, technicians, and laboratory experts.

The noise reduction benefits from these substantial expenditures and from engine improvements have been impressive as can be seen by examining noise contour areas. The comparison is made for 100 EPNdB takeoff and approach contours for long-range airplanes for the 1950's and 1970's, and for medium- and short-range airplanes for the 1950's through the 1980's. We see in this chart that the noise exposure area for long and medium-range airplanes has been typically reduced by 80 to 90 percent from the 1950's to the 1980's. For the short-range airplanes, the corresponding reduction is around 65 percent. It is again clear that substantial noise improvements have been realized.

H.R. 3942—AVIATION SAFETY AND NOISE REDUCTION ACT

Starting with title III, we support that part of section 303 which requires a cost and benefit analysis of a potential regulation requiring a more stringent noise standard for new production aircraft that do not meet stage 3. Our industry is enormously complex. Therefore, changes in legislation or regulations can have major and wide-ranging effects on individual companies, airlines, fuel consumption, employment, and exports, to mention a few. More impor-

tantly, the effects that will result from legislative or regulatory changes are not readily obvious. Thus, in-depth studies are absolutely necessary to identify and define the costs and benefits associated with proposed Government actions.

Similarly, we support the 10-year moratorium for changes to in-service aircraft. We would not support this section if it could be interpreted, however, to prevent voluntary airplane modification by industry. The airlines are already encountering substantial cost increases, including, for example, the spiraling cost of jet fuel, and will encounter significant additional costs to meet the stage 2 noise requirement of FAR 91-136. The airlines, therefore, need time to absorb the costs of retrofit, reengine, or early replacement of aircraft for noise reduction purposes.

We do question why the moratorium starts January 1, 1981. The FAA has already established noise standards for the fleet and more stringent standards for manufacturers, so why not have the moratorium start on the date of enactment of this bill? With such a change, the airlines could carry on their actions to meet FAR 91-136 without fear that a more stringent fleet noise standard would be adopted between now and January 1, 1981.

It appears that section 301 would put the U.S. noise requirements for foreign air transportation on a collision course with recent ICAO Council recommendations. The council has urged all of its contracting States not to adopt foreign noise limitations before January 1, 1988. Further, any post-1988 prohibitions should be limited to those airports which are especially sensitive to aircraft noise.

We are concerned that unilateral actions by the U.S. Government, counter to the ICAO recommendation, could generate retaliatory action against U.S. carriers or other U.S. interests. Further, it appears that a blanket rule imposed by section 302 would negate normal regulatory negotiation flexibility required in complex international agreements.

For example, flexibility is required to address such unique circumstances as: One, some foreign airlines make only infrequent stops in Alaska for refueling; two, some operate equipment that may not be retrofitable to stage 2; three, some are small airlines without the financial wherewithal to retrofit, reengine, or replace; and four, many airlines operate their equipment in a manner such that essentially all aircraft in their fleet would have to be brought into compliance with stage 2 standards, even though they have relatively few flights into the United States of America. We would recommend section 302 be modified such that the FAA is charged to work out satisfactory international agreements considering all relevant factors.

While we recognize and support the good intentions of section 305, namely protection of the viability of service to small communities, we are concerned that the restrictions will adversely impact airline scheduling, and we therefore support the Air Transport Association and the Association of Local Transport Airlines position on this section.

Turning now to title V, we feel that the FAA's efforts in developing a viable collision avoidance system are important and that periodic reporting to Congress is appropriate.

Title V addresses an extremely important and complex subject, that is, control of navigable airspace. The FAA is considering various changes in controls of navigable airspace to enhance flight safety. In considering these changes, the FAA will of necessity have to study a broad range of issues, including the impact on general aviation and commuter aircraft operations and cost, the impact on commercial jet transport aviation operations and cost, the impact on FAA operations and, most importantly, the impact on safety for all who fly in the U.S.-controlled airspace. Without belaboring the point, it can be seen that alteration of today's system to improve safety requires careful and comprehensive analysis and planning that this section would constrain. The NPRM process is working and the FAA has received numerous comments for consideration in their effort to improve safety. Rather than foreclosing some of the FAA's options, it may be better to have title V require that the FAA report its findings and recommendations to Congress after a suitable period of time.

In conclusion, we advocate integration of those sections of H.R. 3942 which we have just supported, with title III of Senate bill S. 413.

Turning to some of the issues raised in your letter of June 15, I would now like to address those issues where you asked that we discuss the present status of engine technology, the availability of quieter aircraft, and the impact of noise regulations on engine fuel efficiency. In discussing these, I would like to point out that the complexity of some of the issues raised is the very reason Boeing supports the concept of the cost and benefit analysis embodied in section 303.

STATUS OF ENGINE TECHNOLOGY

As I shall discuss later, the availability of correctly sized new technology engines is one of the keys to introduction of quieter aircraft. For a discussion of the status of engine technology, I would like to defer to the representatives of the engine manufacturers.

AVAILABILITY OF QUIETER AIRCRAFT

Various models of today's DC-10, L-1011, and 747 widebody family of high-capacity, long-range airplanes approach or meet stage 3 noise requirements. No existing standard body long-range aircraft meets stage 3 though Boeing is studying an all-new 200-passenger trijet, the 777, for that market. Also, in November we will flight-test a derivative of today's 707 with new high bypass ratio CFM 56 engines. Both aircraft would meet stage 3 if produced.

In the medium-range category, various models of widebody aircraft approach or meet stage 3 noise requirements. No existing standard body meets stage 3, but Boeing's recently committed 757 standard body and 767 twin-aisle will when introduced into service in 1983 and 1982 respectively.

In the short-range category, no existing standard body meets stage 3. The DC-9-80 will reportedly meet stage 3 when it is introduced, although it is 30 percent larger than the present DC-9-30 and the 737-200. Boeing is studying stage 3 derivatives of the 727, 737, and 757, as well as additional noise reduction of current 727 and 737 models.

The point is, in the long- and medium-range markets, there are several aircraft models in production that approach or meet stage 3 limits and several models committed to production that will meet stage 3. In the short-range market, this is not the case. No all-new airplane in the 100-passenger size class is currently committed to production, and further, no suitable high bypass ratio engine for this size airplane has been committed. This is understandable considering the problems involved in launching a new airplane for this specific market segment.

Historically, as traffic grows, airlines acquire larger, longer range, and more efficient aircraft. The larger airlines, domestically referred to as trunks, already have a large inventory of small short-to-medium range aircraft. During the recent past, they have placed many orders for the larger 727-200. These 135-set aircraft will be used in many cases to replace smaller aircraft such as DC-9's, 737's and 727-100's, and will become the bottom of the trunk system. Currently these same carriers are turning their attention to the middle of their systems with kickoff orders being placed for new 175- to 200-seat aircraft such as the 757 and 767. These actions can have two effects:

First, the trunk airlines who traditionally have been our primary kickoff customers for new airplane programs are heavily committed through the mid-1980's, and we judge them unlikely to need or to kickoff the new small airplane program during this time period.

Second, a significant number of small, short-range aircraft will likely be placed on the second-hand market. The smaller airlines, referred to as regionals or locals, tend to need smaller, shorter-range aircraft. Because of their modest size, however, these smaller airlines tend to increase their fleet sizes slowly with used airplanes from the trunk carriers, and new small airplanes from the manufacturers. Furthermore, they generally cannot commit to the large number of airplanes and the long leadtime Federal obligation required for the manufacturer to launch a new model.

The attached chart shows typical key milestones and decision points involved in introducing a new airplane. Historically, the program definition phase leading up to a formal program go-ahead has taken many years of study, development, demonstration, compromise, and negotiation before binding contracts are signed by all participating parties, that is, airframe and engine manufacturers, subcontractors, airlines, and money lenders.

I might say that that program on the 767 which has only recently been given program status go-ahead went from preliminary design into semiproject status in 1972.

Frequently the engine is the long lead item in the design and development phase and will most likely pace the program if the engine is substantially a new design. Typically this phase requires 3.5 to 4 years during which millions of man-hours are expended in producing the first flight article and preparing for the incredibly complex production phase.

Between first flight and delivery of the first production article is a rigorous, formal certification phase involving several airplanes and detailed review by both government and customer representatives. By the end of this proof-of-compliance phase, the airplane

manufacturer, subcontractors, and customers will have spent or obligated billions of dollars.

For the preceding reasons, not even the first serious discussions have been held with the airlines relative to an all-new airplane to replace the small 737's and DC-9's. Therefore, it appears highly unlikely that such an airplane could be available in quantity until well after 1985. The point of this discussion is that there are no short-cuts to giving birth to a new airplane.

We are studying reengining existing designs as an alternate approach. However, placing new or derivative engines on today's airframes is no simple task. Such a new or derivative engine usually changes the weight and balance of the airplane, changes drag, and changes structural requirements. Also, because more advanced engine technology means higher cost, and because not insignificant development funds must be expended to match the different engine to the existing airframe, reengining often means stretching the airframe for additional passengers to offset the additional costs. Because of these impacts, reengining an existing airframe may or may not provide a desirable product. Boeing developed and proposed to our customers a reengineed and stretched 727, the 727-300B. We expended a substantial amount of time, effort and money, I think in the neighborhood of \$50 million, on that program, but it was not accepted in the marketplace.

We are continuing to investigate reengineed versions of the 727 and 737 with study engines from Pratt & Whitney, General Electric, CFMI, and Rolls-Royce. Some of the designs being studied would approach stage 3 noise standards and some would meet the standards. Thus far, however, we have not found an acceptable combination that allows us to retain the 100 seats in the 737, nor the 135 seats in the 727, meet the cost and effectiveness criteria required for a salable product, and still comply with stage 3 requirements.

We are continuing our efforts to quiet the existing low bypass engines of production 727's and 737's with sound attenuation devices. An example of such action is our commitment on a recent 737 sale to incorporate a jet noise mixer attenuation device for delivery in 1980 to Lufthansa German Airlines. Such an approach to improving existing products allows airlines to acquire quieter airplanes without being confronted with the enormous hurdle of an all-new airplane kickoff commitment. It should be stated, however, that while we are optimistic that we can develop additional noise attenuation technology over time, we cannot say with any assurance that we can certify 727's and 737's to stage 3 by this approach.

IMPACT OF NOISE REGULATIONS ON FUEL EFFICIENCY

The last issue raised by the chairman addresses the impact of noise regulations on fuel efficiency. One can assess the fuel efficiency impact of retrofitting or reengining airplanes now in the fleet to meet fleet noise standards—that is, FAR 91-136. One can also address the impact of designing and manufacturing new engines and airplanes to meet noise standards. The former has been explored in previous testimony at other hearings on the fuel efficiency impact of retrofitting and reengining airplanes now in the

airline fleet, and can be found in the appendix attached to this testimony.

The fuel impact of all-new designs has, to my knowledge, not been explored in previous testimony on airline noise legislation. Perhaps that is because the question is difficult, if not impossible, to answer accurately. We would need to compare an engine and airplane designed without any regard to noise versus a similar airplane and engine designed to meet specific noise standards. However, no one designs airplanes or engines without regard to noise. The noise standards are an intrinsic part of our business, an inherent part of both engine and airframe design. Without such a benchmark, we can only estimate how increasingly stringent noise standards are impacting airplane fuel efficiency. As shown in the figure, designing an airplane to meet today's stage 3 noise standard imposes about a 3-percent fuel burn penalty when design tolerances are included, versus the same airplane that would just meet the original 1969 stage 2 noise standard. While 3-percent may not sound large, it has a very substantial impact.

For example, imposing a 3-percent penalty on a 747 in typical use would result in approximately 400,000 additional gallons of fuel being used in 1 year for each airplane. That is enough fuel to heat about 650 average homes for 1 year. More importantly, the figure shows that noise standards more stringent than stage 3 would impose very, very severe fuel efficiency penalties.

Thank you, Mr. Chairman, that concludes my testimony.

[Testimony resumes on p. 292.]

[Mr. Blumenthal's prepared statement and attachment follow:]

Statement of
Boeing Commercial Airplane Company
A Division of
The Boeing Company

Prepared for
U.S. House of Representatives
Committee on Interstate and Foreign Commerce
Subcommittee on Transportation and Commerce

Presented by:

Vaughn L. Blumenthal
Director - Noise and Emission Abatement Programs

and

Richard E. Russell
Chief Engineer - Noise Technology

June 27, 1979

June 25, 1979/DRAFT

Mr. Chairman and members of the Transportation and Aviation Subcommittee, my name is Vaughn Blumenthal. I am the Director of Noise and Emission Abatement Programs of the Boeing Commercial Airplane Company. Accompanying me is Richard E. Russell, Chief Engineer for Noise Technology of the Boeing Commercial Airplane Company. As you may know, I testified at Congressman Anderson's Public Works and Transportation Committee hearings on various noise bills on May 1, 1979. A number of our basic positions were stated in that testimony and have not changed. We are acutely aware of the need for quieter airplanes and, consequently, have spent and are spending millions to reduce noise.

Noise Research

We have maintained an aggressive program of pursuing development and application of meaningful and cost effective noise reduction technology for our commercial jet aircraft family. Our concern for the airport community noise problem is dramatically demonstrated by the heavy investment made toward its solution in terms of facilities, manpower, research and development expenditures, and product improvement. The attached chart lists the Boeing research and development expenditures in aircraft noise reduction activities. The figures are in millions of dollars. We see that over the last twenty years, Boeing has spent around \$100 million in independent research and development (IR&D) funds, plus about \$40 million for noise reduction work associated directly with production airplane programs and a further \$17 million for capital expenditures for acoustic laboratory facilities -- for a 20 year total of more than \$150 million. In addition, Boeing has received about \$55 million in government monies for aircraft noise reduction research and development. The apparent reduction in government funding is cause for concern. Increased expenditure by the government is in order to improve community

Boeing R&D Airplane Noise Reduction Expenditures

(Millions of Dollars)

Year	Boeing funded	Government funded	Total dollars
1958 through 1964	2,461	0,322	2,783
1965	1,384	0,210	1,594
1966	2,528	0,925	3,453
1967	3,197	3,464	6,661
1968	10,957	6,878	17,835
1969	8,508	2,873	11,381
1970	4,447	1,082	5,529
1971	3,594	5,780	9,382
1972	6,031	10,918	16,949
1973	9,668	9,635	19,303
1974	5,866	8,049	13,915
1975	7,499	3,232	10,731
1976	8,584	0,845	9,429
1977	11,277	0,569	11,846
1978	10,631	0,407	11,038
Total	96,632	55,197	151,829
1979 estimate	9,435	0,395	9,830

• Production airplane support - \$42M

• Acoustic test facilities - \$17M

noise. The total dollars expended, when the capital facilities and production airplane work are included, is over \$200 million, or an average of over \$10 million per year. The yearly manpower involved in noise reduction activities has been substantial.

The noise reduction benefits from these substantial expenditures have been impressive as can be seen by examining noise contour areas. The comparison is made for 100 EPNdB takeoff and approach contours for long range airplanes for the 50s and the 70s, and for medium and short range airplanes for the 50s through the 80s. We see in this chart that the noise exposure area for long and medium range airplanes has been typically reduced by 80 to 90 percent from the 1950s to the 1980s. For the short range airplanes, the corresponding reduction is around 65 percent. It is again clear that substantial noise improvements have been realized.

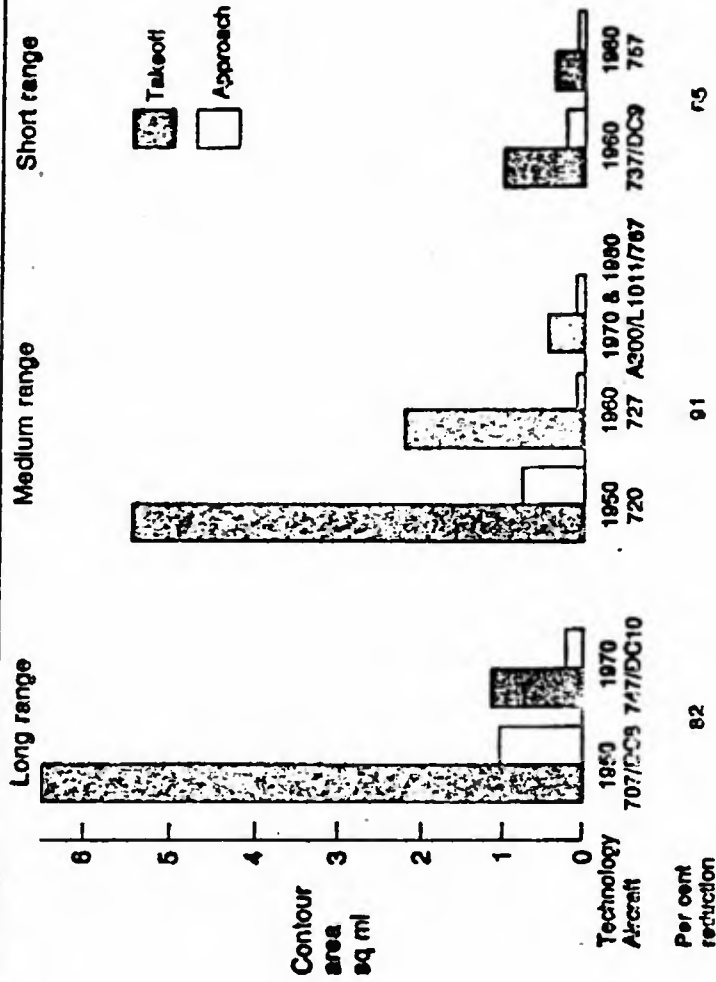
H.R. 3942 - Aviation Safety and Noise Reduction Act

Turning now to the bill under consideration, H.R. 3942, I will restrict my comments to those sections of Titles III, IV, and V where I feel that we have appropriate expertise. After discussing specific sections of those titles, I will address the questions posed in Chairman Florio's letter to AIA.

Starting with Title III, we support that part of Section 303 which requires a cost and benefit analysis of a potential regulation requiring a more stringent noise standard for new production aircraft that do not meet Stage 3. Our industry is enormously complex. Therefore, changes in legislation or regulations can have major and wide-ranging effects on individual companies, airlines, fuel consumption, employment, and exports to mention

Jet Aircraft Noise Technology

Takeoff/Approach - 100 EPNdB Contour Areas



a few. More importantly, the effects that will result from legislative or regulatory changes are not readily obvious. Thus, in-depth studies are absolutely necessary to identify and define the costs and benefits associated with proposed government actions.

Similarly, we strongly support the ten year moratorium for changes to in-service aircraft. We would not support this section if it could be interpreted to prevent voluntary airplane modifications by industry. The airlines are already encountering substantial cost increases, including, for example, the spiraling cost of jet fuel, and will encounter significant additional costs to meet the Stage 2 noise requirement of FAR 91-136. The airlines, therefore, need time to absorb the costs of retrofit, re-engine, or early replacement of aircraft for noise reduction purposes. We do question why the moratorium starts January 1, 1981. The FAA has already established noise standards for the fleet and more stringent standards for manufacturers, so why not have the moratorium start on the date of enactment of this bill? With such a change, the airlines could carry on their actions to meet FAR 91-136 without fear that a more stringent fleet noise standard would be adopted between now and January 1, 1981.

It appears that Section 302 would put the U.S. noise requirements for foreign air transportation on a collision course with recent ICAO Council recommendations. The Council has urged all of its contracting States not to adopt foreign noise limitations before January 1, 1988. Further, any post-1988 prohibitions should be limited to those airports which are especially sensitive to aircraft noise.

We are concerned that unilateral actions by the U.S. government, counter to the ICAO recommendation, could generate retaliatory action against U.S. carriers or other U.S.

interests. Further, it appears that a blanket rule imposed by Section 302 would negate normal regulatory negotiation flexibility required in complex international agreements. For example, flexibility is required to address such unique circumstances as: (1) some foreign airlines make only infrequent stops in Alaska for refueling, (2) some operate equipment that may not be retrofitable to Stage 2, (3) some are small airlines without the financial wherewithal to retrofit, re-engine, or replace, and (4) many airlines operate their equipment in a manner such that essentially all aircraft in their fleet would have to be brought into compliance with Stage 2 standards, even though they have relatively few flights to the U.S.A. We would recommend Section 302 be modified such that the FAA is charged to work out satisfactory international noise agreements considering all relevant factors.

While we recognize and support the good intentions of Section 305, namely protection of the viability of service to small communities, we are concerned that the restrictions will adversely impact airline scheduling, and we therefore support the Air Transport Association and the Association of Local Transport Airlines' position on this section.

Turning now to Title IV, we feel that the FAA's efforts in developing a viable Collision Avoidance System are extremely important and that periodic reporting to Congress is appropriate.

Title V addresses an extremely important and complex subject, that is, control of navigable airspace. The FAA is considering various changes in controls of navigable airspace to enhance flight safety. In considering these changes, the FAA will, of necessity, have to study a broad range of issues including the impact on general aviation and commuter aircraft operations and cost, the impact on commercial jet transport

aviation operations and cost, the impact on FAA operations, and most importantly -- the impact on safety for all who fly in the U.S. controlled airspace. Without belaboring the point, it can be seen that alteration of today's system to improve safety requires careful and comprehensive analysis and planning that this section would constrain. The NPRM process is working and the FAA has received numerous comments for consideration in their effort to improve safety. Rather than foreclosing some of the FAA's options, it may be better to have Title V require that the FAA report its findings and recommendations to Congress after a suitable period of time.

In conclusion, we advocate integration of those sections of H.R. 3942 which we have just supported, with Title III of Senate Bill S.413.

Questions Raised in Chairman Florio's June 15, 1979, Letter to AIA

I would now like to address the issues raised in Chairman Florio's June 15, 1979, letter to the Aerospace Industries Association. Chairman Florio asked that we discuss the present status of engine technology, the availability of quieter aircraft, and the impact of noise regulations on engine fuel efficiency. In discussing these, I would like to point out that the complexity of some of the issues raised is the very reason Boeing supports the concept of the cost and benefit analysis embodied in Section 303.

Status of Engine Technology

As I shall discuss later, the availability of correctly sized new technology engines is one of the keys to introduction of quieter aircraft. For a discussion of the status of engine technology, I would like to defer to the representatives of the engine manufacturers.

Availability of Quieter Aircraft

Various models of today's DC-10, L-1011, and 747 widebody family of high capacity long range airplanes approach or meet Stage 3 noise requirements. No existing standard body long range aircraft meets Stage 3 though Boeing is studying an all-new 200 passenger trijet, the 777, for that market. Also, in November we will flight test a derivative of today's 707 with new high by-pass ratio CFM 56 engines. Both aircraft would meet Stage 3 if produced.

In the medium range category, various models of widebody aircraft approach or meet Stage 3 noise requirements. No existing standard body meets Stage 3, but Boeing's recently committed 757 standard body and 767 twin aisle will when introduced into service in 1983 and 1982 respectively.

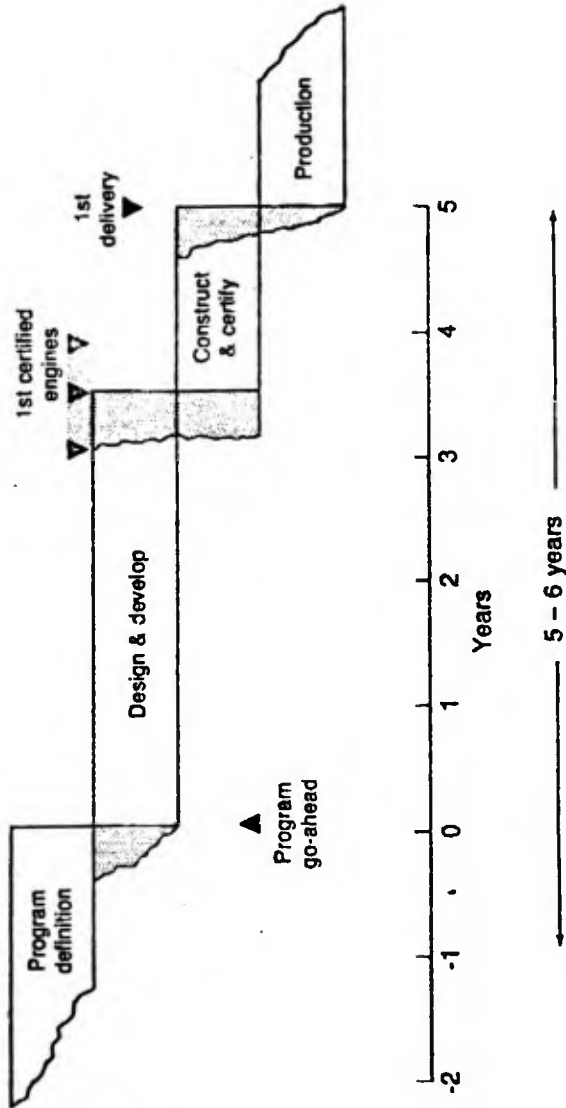
In the short range category, no existing standard body meets Stage 3. The DC-9-80 will reportedly meet Stage 3 when it is introduced although it is 30% larger than the present DC-9-30 and the 737-200. Boeing is studying Stage 3 derivatives of the 727, 737 and 757, as well as additional noise reduction of current 727 and 737 models.

The point is, in the long and medium range markets, there are several aircraft models in production that approach or meet Stage 3 limits and several models committed to production that will meet Stage 3. In the short range market, this is not the case. No all-new airplane in the 100 passenger size class is currently committed to production and further, ~~no suitable high by-pass ratio engine for this size airplane has been committed.~~ This is understandable considering the problems involved in launching a new airplane for this specific market segment.

Historically, as traffic grows, airlines acquire larger, longer range, and more efficient aircraft. The larger airlines -- domestically referred to as trunks -- already have a large inventory of small short to medium range aircraft. During the recent past, they have placed many orders for the larger 727-200. These 135 seat aircraft will be used in many cases to replace smaller aircraft such as DC-9s, 737s and 727-100s, and will become the bottom of the trunk system. Currently these same carriers are turning their attention to the middle of their systems with kickoff orders being placed for new 175 to 200 seat aircraft such as the 757 and 767. These actions can have two effects: first, the trunk airlines who traditionally have been our primary kickoff customers for new airplane programs, are heavily committed through the mid-1980s and we judge them unlikely to need or to kickoff a new small airplane program during this time period. Secondly, a significant number of small, short range aircraft will likely be placed on the secondhand market. The smaller airlines -- referred to as regionals or locals -- tend to need small, shorter range aircraft. Because of their modest size, these smaller airlines tend to increase their fleet sizes slowly with used airplanes from the trunk carriers, and new small airplanes from the manufacturers. Furthermore, they generally cannot commit to the large number of airplanes, and the long lead time financial obligation, required for the manufacturer to launch a new model.

The attached chart shows typical key milestones and decision points involved in introducing a new airplane. Historically, the program definition phase leading up to a formal program "go-ahead" has taken many years of study, development, demonstration, compromise and negotiation before binding contracts are signed by all participating parties, i.e., airframe and engine manufacturers, subcontractors, airlines and money lenders.

New 100 Passenger Airplane



Frequently the engine is the long lead item in the design and development phase and will most likely pace the program if the engine is substantially a new design. Typically this phase requires 3 1/2 to 4 years during which millions of manhours are expended in producing the first flight article and preparing for the incredibly complex production phase.

Between first flight and delivery of the first production article is a rigorous, formal "certification phase" involving several airplanes and detailed review by both government and customer representatives. By the end of this proof-of-compliance phase, the airplane manufacturer, subcontractors, and customers will have spent or obligated billions of dollars.

For the preceding reasons, not even the first serious discussions have been held with the airlines relative to an all-new airplane to replace the small 737s and DC-9s. Therefore, it appears highly unlikely that such an airplane could be available in quantity until well after 1985. The point of this discussion is that there are no short-cuts to giving birth to a new airplane.

We are studying re-engining existing airplanes as an alternate approach. However, placing new or derivative engines on today's airframes is no simple task. Such a new or derivative engine usually changes the weight and balance of the airplane, changes drag, and changes structural requirements. Also, because more advanced engine technology means higher cost, and because not insignificant development funds must be expended to match the different engine to the existing airframe, re-engining often means stretching the airframe for additional passengers to offset the additional costs. Because of these impacts, re-engining an existing airframe may or may not provide a

desirable product. Boeing developed and proposed to our customers a re-engined, and stretched 727, the 727-300B. We expended a substantial amount of time, effort and money on that program, but it was not accepted in the marketplace. We are continuing to investigate re-engined versions of the 727 and 737 with study engines from Pratt & Whitney, General Electric, CFMI, and Rolls Royce. Some of the designs being studied would approach Stage 3 noise standards and some would meet the standards. Thus far, however, we have not found an acceptable combination that allows us to retain the 100 seats in the 737, nor the 135 seats in the 727, meet the cost and effectiveness criteria required for a saleable product, and still comply with Stage 3 requirements.

We are continuing our efforts to quiet the existing low by-pass engines of production 727s and 737s with sound attenuation devices. An example of such action is our commitment on a recent 737 sale to incorporate a jet noise mixer attenuation device for delivery in 1980 to Lufthansa German Airlines. Such an approach to improving existing products allows airlines to acquire quieter airplanes without being confronted with the enormous hurdle of an all-new airplane kickoff commitment. It should be stated, however, that while we are optimistic that we can develop additional noise attenuation technology over time, we cannot say with any assurance that we can certify 727s and 737s to Stage 3 by this approach.

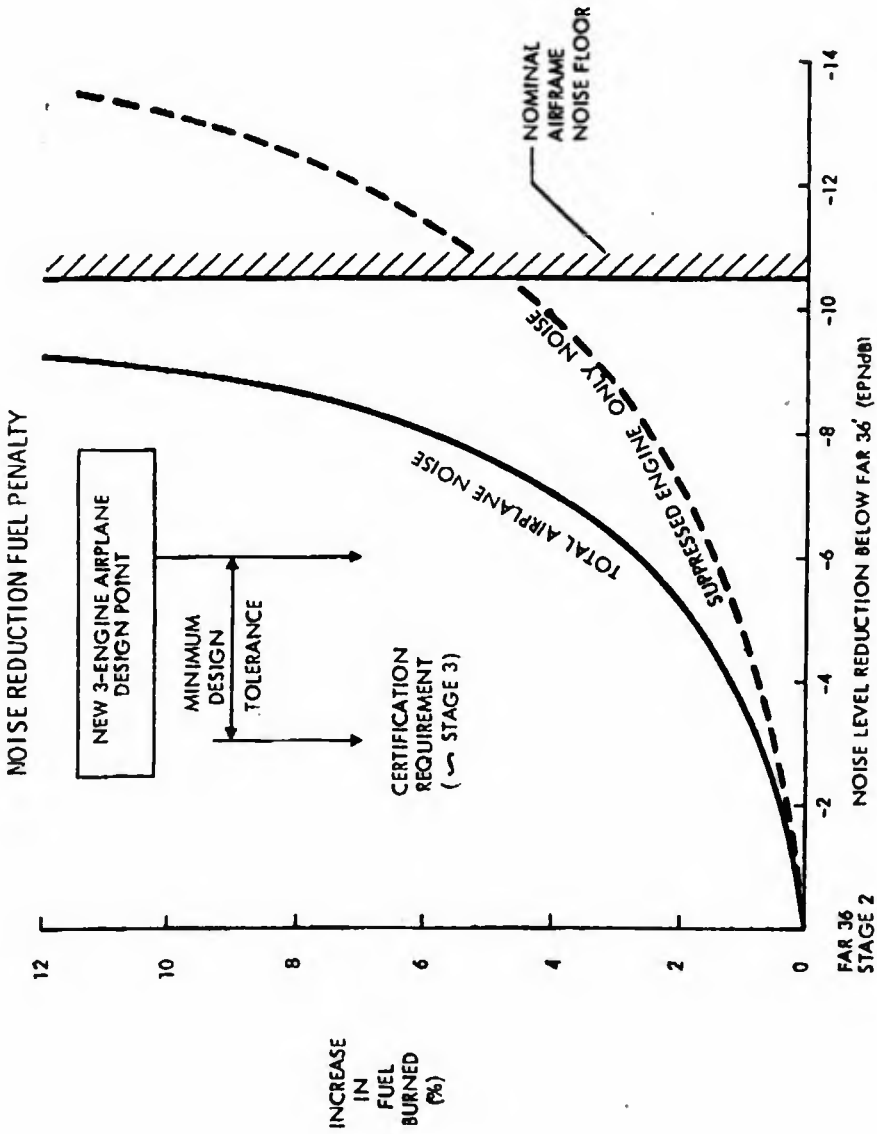
Impact of Noise Regulations on Fuel Efficiency

The last issue raised by the Chairman addresses the impact of noise regulations on fuel efficiency. One can assess the fuel efficiency impact of retrofitting or re-engining airplanes now in the fleet to meet fleet noise standards -- that is, FAR 91-136. One

can also address the impact of designing and manufacturing new engines and airplanes to meet noise standards. The former has been explored in previous testimony at other hearings on the fuel efficiency impact of retrofitting and re-engining airplanes now in the airline fleet, and can be found in the appendix attached to this testimony.

The fuel impact of all-new designs has, to my knowledge, not been explored in previous testimony on airline noise legislation. Perhaps that is because the question is difficult, if not impossible, to answer accurately. We would need to compare an engine and airplane designed without any regard to noise versus a similar airplane and engine designed to meet specific noise standards. However, no one designs airplanes or engines without regard to noise. The noise standards are an intrinsic part of our business, an inherent part of both engine and airframe design. Without such a benchmark, we can only estimate how increasingly stringent noise standards are impacting airplane fuel efficiency. As shown in the figure, designing an airplane to meet today's Stage 3 noise standard imposes about a 3% fuel burn penalty when design tolerances are included, versus the same airplane that would just meet the original 1969 Stage 2 noise standard. While 3% may not sound large, it has a very substantial impact. For example, imposing a 3% penalty on a 747 in typical use would result in approximately 400,000 additional gallons of fuel being used in one year for each airplane. That is enough fuel to heat about 650 average homes for one year. More importantly, the figure shows that noise standards more stringent than Stage 3 would impose very, very severe fuel efficiency penalties.

Thank you Mr. Chairman. That concludes my testimony.



SUPPLEMENTARY STATEMENT OF
BOEING COMMERCIAL AIRPLANE COMPANY
A DIVISION OF
THE BOEING COMPANY

PREPARED FOR

U.S. HOUSE OF REPRESENTATIVES
COMMITTEE ON INTER-STATE AND FOREIGN COMMERCE
SUBCOMMITTEE ON TRANSPORTATION AND COMMERCE

JUNE 27, 1979

BOEING AIRPLANE NOISE STATUS

Since past statements to various congressional committees have gone into considerable detail on the research programs undertaken by Boeing in developing noise reduction concepts for our four basic models, this statement will not repeat much of what is already in the record. Suffice it to state at this time that we have developed acoustic treatment for all of our airplanes that permit them to comply with both U.S. and ICAO noise standards. All except the treatment for the 707 family are currently in production for newly produced airplanes, and many have been provided for retrofitting earlier delivered airplanes in existing fleets, both domestically and internationally.

To provide an overall picture of the current state of readiness of various acoustic treatments for our airplanes, we have included 4 pages of charts, along with this prepared statement, that provide details for the record. The statement will summarize those charts to illustrate specific items of interest for each airplane model category.

707/720 Airplanes

Model 707 and 720 airplanes discussed in this statement allude to the fanjet-powered category, powered by JT3D engines manufactured by Pratt & Whitney Aircraft (P&WA). Earlier turbojet-powered models are not considered to be candidates for retrofit because of their age and the absence of a viable means of acoustically treating their pure jet engines.

Although an acoustically treated nacelle design for the 707/720 fanjets has been developed, tested, and found to be certifiable to FAR Part 36 noise standards, it has not yet been committed to production. Due largely to the high cost of retrofitting this nacelle on existing 707 family airplanes, the airlines have not yet placed orders to permit a production go-ahead by Boeing. Although we estimate a 1979 shipset kit price of \$3.084 million for the 707 treatment, the actual price would depend on delivery dates of the kits.

In addition to kit price, Boeing estimates that 3,000 manhours of direct labor would be required to install a shipset of treated nacelles on a 707-type airplane. Airplane downtime is estimated at 16 to 23 days. Both of these figures will vary from airline to airline, and would be expected to improve as experience is gained.

The first retrofit kit for 707 aircraft could be produced by Boeing and certified by the FAA, and thus be available for installation on existing aircraft, in 32 months after receipt of sufficient firm orders for Boeing to order a production go-ahead. This is not a conservative estimate, but rather assumes a very tight schedule. Kits could be produced at a rate of up to 22 shipsets per month if the market requires such a rate. This rate could be achieved 39 months after go-ahead. However, actual rates would be dependent on economic production associated with retrofit timing requirements.

-As to airplane performance effects of the treated nacelle installation,

we estimate less than 200 nautical miles reduction in maximum range, almost entirely due to an increase of 3150 pounds in operating empty weight. For a given flight this translates into a trip fuel burn increase of about 1.5%.

The option of re-engining 707 airplanes with the new CFM56 high-bypass ratio engines has also been offered to the airlines. Boeing and CFM International are currently engaged in a cooperative effort to flight test a 707 with CFM56 engines. The CFM56 engine would reduce the noise levels of 707 airplanes to Stage 3 standards, and also would provide 13 to 15% reduction in block fuel consumption relative to the current production airplane. The study price for replacement engines is about \$11 million per shipset in 1979 dollars.

The CFM56 re-engine modification was offered to the world's 707 operators during late 1978. Interest did exist, but for a variety of reasons, not enough potential customers appeared ready to make such decisions in sufficient quantities to justify production go-ahead. Therefore, commercial offerings have been suspended, but Boeing continues to furnish information to potential customers on request. The 707/CFM56 demonstration and flight test program continues with first flight scheduled for November 1979. If production go-ahead is achieved, the CFM56 modification could be available in about 32 to 36 months.

Boeing retains the flexibility to re-examine program direction as future developments materialize.

727 Airplanes

Model 727 airplanes in the fleet can be certified to FAR 36 by various levels of acoustic treatment, depending mainly on operating weights and the specific configuration of JTBD engines installed. For estimates based on 1979 dollars, the kits for the several airplane configurations in the fleet could vary from \$76,800 for P&WA BG-19 treatment, to \$173,100 for BG-19 plus Boeing treated nacelles.

All of the 727 acoustic treatment options are currently in production and are being installed on newly manufactured airplanes. Kits have also been made available for retrofitting earlier airplanes in the fleet.

New orders for retrofit kits would require at least 18 months between the order and delivery of first kits. (Availability of engine fan duct kits is believed to be compatible with this schedule, but requires verification by P&WA.) A production rate of 38 shipsets per month within 22 months of go-ahead is attainable for the Boeing-manufactured portion of the treatment. The actual rate would have to be determined by market requirements.

It is estimated by Boeing that 1390 manhours would be required for modification and installation effort for incorporating the Boeing-treated inlets and tailpipes. This may vary with airline experience, but to date little airline experience has been attained.

Our estimate of 10 hours of airplane downtime for the installation assumes that built-up nacelles are available and the majority of the 1390 manhours will have been expended when the airplane is pulled off the line.

Airplane performance changes are negligible with any of the acoustic treatments described. There is an increase of 416 pounds in operating empty weight for both Boeing and P&WA treatment, and 240 pounds for the P&WA alone.

737 Airplanes

Like the 727 fleet, FAR 36 compliant acoustic treatment is in production, and is being delivered on newly produced airplanes. Kits, consisting of a new treated inlet, treated tailpipe, and P&WA fan case double wall treatment (FCO), also referred to as BG-16, have been made available for retrofitting of older aircraft currently in the fleet. The 1979 estimated price per shipset is \$227,200.

New orders for retrofit kits would require at least 18 months between order and delivery of first kits. As for the 727, availability of P&WA engine kits require verification by P&WA. A Boeing production rate of 10 shipsets per month could be attained 18 months after go-ahead.

It is estimated that 168 manhours of installation time would be required per airplane. This is considerably less than the 1390 manhours estimated for the 727, due to the fact that whereas the 727 installation requires considerable rework of existing hardware, the 737 requires only removal of old parts and replacement with new. Neither the 727 nor 737 installation manhour estimates include time required for installation of the P&WA portion of the treatment. Airplane downtime for the installation is estimated to be 7 hours.

Airplane performance changes due to the treated nacelle installation are negligible. The increase in operating empty weight for the Boeing and B&WA kits totals 184 pounds.

747 Airplanes

Treated nacelle kits are available and in production for retrofitting pre-December 1971 non-FAR 36 Appendix compliant 747 airplanes. All airplanes delivered since that time meet Appendix C requirements. Most of the U.S. fleet of 747's that were initially delivered with earlier nacelle configurations have since been retrofitted with FAR 36 Appendix C compliant configurations. The estimated kit price in 1979 dollars is \$391,600. This estimate excludes costs of spares, installation, downtime, and operational costs, as is also the case for the 707, 727, and 737 kits. For all four models, actual price will vary with delivery schedule.

At least 18 months' lead time is required between date of a new order and delivery of the first 747 kit.

Installation manhours are estimated to be 64 hours per airplane, and the airplane downtime is about 16 hours.

Performance changes are negligible, and the operating empty weight increases by 184 pounds.

The foregoing comments pretty well summarize the status of noise reduction capability for the Boeing fleet. As mentioned earlier, additional details are available in the charts attached to this statement.

SUMMARY
BOEING AIRPLANE MODIFICATION DATA - TO MEET FAR 36, APP. C
SHEET 2

INFORMATION	747-100	747-100	747-200	747-200
CONFIGURATION				
KIT PRICE ESTIMATE (1) SPARES NOT INCLUDED	FIXED LIP INLETS + SOUND ABSORBENT MATERIAL \$391,600			
INSTALLATION (2) MANHOURS COST	64	64	64	64
AIRPLANE DOWN TIME (3)	16 HRS	16 HRS	16 HRS	16 HRS
PERFORMANCE CHANGES (4) (NOMINAL ESTIMATE)				
Δ RANGE (NAM)	NEGIGIBLE	NEGIGIBLE	NEGIGIBLE	NEGIGIBLE
Δ FIELD LENGTH (FT)	NEGIGIBLE	NEGIGIBLE	NEGIGIBLE	NEGIGIBLE
Δ NAM/LB	NEGIGIBLE	NEGIGIBLE	NEGIGIBLE	NEGIGIBLE
Δ DEW (LB)	+104 TO +372*	+104 TO +372*	+104 TO +372*	+104 TO +372*
ADDITIONAL MAINTENANCE (5) REQUIREMENTS	LESS	LESS	LESS	LESS
AVAILABILITY: DATES	18 MONTHS FROM DATE OF ORDER			
RATES	9 PER MONTH AFTER 18 MO FROM INITIAL ORDER			
NOISE LEVELS: FAR 36 (6)	FAR 36 DEC. 1971	FAR 36 DEC. 1971	FAR 36 DEC. 1971	FAR 36 DEC. 1971
TAKEOFF (NO CUTBACK)	108.0	108.0	108.0	108.0
APPROACH (NO CUTBACK)	113.3	111.4	107.4	107.4
APPROACH (NO CUTBACK) 25°	108.0	108.0	104.6	104.6
APPROACH (NO CUTBACK) 30°	108.0	108.0	108.0	108.0
SIDELINE	108.0	108.0	108.0	108.0
CERTIFICATION STATUS	CERTIFIED TO FAR 36			
STRUCTURAL LIFE EXPECTANCY (7)				
AIRPLANE/ENGINE MODEL	JT9D-3A DRY	JT9D-7 DRY	JT9D-7 DRY	JT9D-7 WET
COMBINATIONS APPLICABLE				
BRCW	233,000	233,000	233,000	275,000
LOG. WT.	564,000	564,000	564,000	564,000

* EXACT WEIGHT INCREASE DEPENDS ON VINTAGE OF BLOW IN DOOR INLET TO BE REPLACED.

MARCH 1979

SUMMARY
BOEING AIRPLANE RE-ENGINE MODIFICATION DATA - TO MEET FAR 36 APP. C
SHEET 3

Information	707-700B/C (Re-engined 707-300B or -300C)	
Configuration Kit Price Estimated (1979 \$) Spares Not Included	CFM56 Engines \$11,018,000.	
Installation	Included in Price Above	
Airplane Down Time ⁽³⁾	About 23 Days	
Performance Changes ⁽⁴⁾ (Nominal Estimate)	<u>-700B</u>	<u>-700C</u>
Δ Range (N.Mi.)	+485	+465
Δ Field Length (Ft.)	-1480	-1480
Δ NAM/Lb.	+13.5%	+13.6%
Δ OEW (Lb.)	+7600	+7600
Additional Maintenance Requirements ⁽⁵⁾	+0.06 MH/Flt. Hr. +\$30.52/Flt. Hr.	
Availability: Mo. After Go-Ahead ⁽⁸⁾ Rates	32 - 36 Months Not Determined	
Noise Levels: FAR 36 ⁽⁶⁾	FAR 36	CFM56
Takeoff	103.8	97.5
Takeoff (Cutback)		93.6
Approach (50° Flaps)	106.3	102.1
(400° Flaps)		101.0
Sideline	106.3	88.9
Certification Status	32 - 36 Months After Go-Ahead	
Structural Life Expectancy ⁽⁷⁾		
Airplane/Engine Model Combinations Applicable	CFM56-1B (22,000 Lb. SLST)	
BRGW	335,500	
Ldg. Wt.	253,000	

March 1979

FOOTNOTES

BOEING AIRPLANE MODIFICATION DATA - TO MEET FAR 36

- (1) All prices are per shipset, excluding installation, unless otherwise noted. Prices are budget quotes based on 1979 dollars. Spares can vary and should be provided by each airline. Engine kit prices should be verified by P&WA. Estimates are based on assumed market levels. Variations from these levels will call for a change in price. Decision to offer 707/720 retrofit kits has not been made as of this date.
- (2) This is a preliminary Boeing estimate of direct labor only, and assumes an experienced crew. Individual airline manhours and costs will vary. Airline estimates for installation and other incremental costs should be provided by each airline. This estimate does not include time required to install engine sound attenuation treatment kits available from Pratt and Whitney.
- (3) This is a nominal Boeing estimate, if Boeing performed the work, for working days only. Actual time will vary, depending upon service bulletins to be implemented. Estimate excludes transit time, holidays, etc. It is assumed that modified engines and Quiet Nacelle components are available at the time of retrofit.
- (4) Nominal estimates shown are subject to change as additional test data become available. Values applicable to specific configurations will be provided in response to individual airline requests.
- (5) Estimated increases and/or decreases in maintenance are provided. This is impossible to accurately quantify until after in-service experience.
- (6) Noise levels for FAR 36 reference points shown for typical configurations of each model.
- (7) This is a valid question but cannot be answered specifically unless the precise year of manufacture and condition of the airframe is known.
- (8) Go-ahead means receipt of sufficient firm orders, not rule date. Lead times and attainable rates shown may be affected by industry capacity. Actual rates depend on market.
- (9) This \$14,800 Boeing charge for BG-19 is a one-time charge per customer.

March 1979

Mr. FLORIO. Thank you.

Mr. HARR. The other statements are briefer than that.

Mr. McPike of McDonnell Douglas Co.

Mr. FLORIO. All of these statements will be entered into the record in their entirety. Please feel free to summarize as you see fit.

STATEMENT OF AUBERT L. McPIKE

Mr. McPIKE. Mr. Chairman, my statement this morning is based primarily upon the statement of Mr. John C. Brizendine, president of the Douglas Aircraft Co., as submitted to you by letter of June 8, 1979.

Mr. Chairman, I will expand on several of the points in that statement in light of the questions raised in your letter of June 15 to Mr. Lloyd Kuhn of the Aerospace Industries Association.

McDonnell Douglas has been following the development of aircraft and airport noise legislation closely over a period of several years. Some of the provisions of the legislation currently under consideration would undoubtedly have a major impact on the future development of the air transportation system. However, our review of the legislation indicates that most of the provisions would impact more directly on the air carriers than on the manufacturers. For those provisions we have no special advice to offer and would prefer to yield to the views of the air carriers who are more directly involved.

Our comments are thus limited to the present state of engine noise technology, the availability of quieter aircraft and the impact of noise regulations on aircraft fuel efficiency.

To understand the present state of engine noise technology, it can be helpful to consider the two distinctive noise sources associated with the turbofan engines which power today's jet transport aircraft. One is the low frequency roar of the jet as it is exhausted from the rear of the engine at high velocity. It is the noise most noticeable as a jet aircraft takes off. The other is the high-pitched whine of the turbomachinery within the engine. The whine is more normally associated with the aircraft during landing at low engine power.

The new widebody aircraft such as the DC-10 have been widely recognized as being much quieter than the aircraft they are replacing. This is because they are powered by the new technology high bypass ratio engines. In this engine, most of the jet exhaust energy is absorbed by the turbine to drive the larger fan. The high bypass ratio engine, therefore, by the nature of its design, has much lower jet exhaust velocities. As a result, the jet roar from these engines is much lower than that of the low bypass ratio engines.

These engines also generate much less whine than the earlier low bypass ratio engines for two reasons. First, the turbomachinery has been designed with advanced technology to minimize noise generation, and second, the nacelles of these engines incorporate sound absorbent material (SAM) to absorb the high-pitched whine which is generated by the engine.

Thus, both the roar and the whine of these high bypass ratio engines are substantially reduced. There is an average reduction of about 15 decibels in the landing and takeoff noise of the DC-10

compared to the DC-8 as a result of the switch to the high bypass ratio engine.

If it were practical on a short-term basis to either replace the current fleet with aircraft powered by high bypass ratio engines or to replace the engines on the current aircraft with high bypass ratio engines, we would expect to see a very dramatic reduction in the airport community noise problem. Unfortunately, that is not practical. Only rarely is it realistic to reengine an existing aircraft and the service life of a transport aircraft is ordinarily 15 to 20 years so it takes a long time to replace the entire fleet. Additionally, the air carrier industry, like the rest of the economy, experienced a major recession in this decade which greatly slowed the conversion to new technology aircraft. Although it has now been some 10 years since the high bypass ratio engine entered service, less than 10 percent of the jet transport aircraft operations in this country are performed by aircraft utilizing it. Thus, the overall airport neighborhood noise problem has not been significantly reduced and there have been increasingly strong pressures for any action which would provide any degree of noise reduction.

These pressures led to the FAA regulations requiring that all aircraft in the U.S. domestic fleet be brought into compliance with the stage 2 limits of part 36 by 1985. Such compliance can be achieved by the incorporation of SAM in the nacelles of the existing engines as well as by reengining or replacing the aircraft. While we believe replacement with stage 3 aircraft or reengining to stage 3 standards would provide great benefits to the airport neighbors, we do not believe that the use of SAM suppression to bring the aircraft into compliance with the stage 2 standards would provide meaningful benefits for most airport neighbors.

The SAM treatment which achieves stage 2 compliance for the DC-9 reduces the whine of the turbomachinery but has no effect on the roar of the jet exhaust. At takeoff power the jet roar completely dominates the noise of the engine and the SAM treatment provides no noise reduction. At the low power used for landing, the whine does contribute to the total noise and the noise reduction due to SAM at the part 36 location is between 4 and 5 EPNdB. However, in the part 36 approach measurement, the aircraft passes less than 400 feet from the microphone. Our studies show that beyond the 400 feet distance, or inside houses, the noise reduction is less than the 4 to 5 EPNdB. In fact, the average airport neighbor would probably experience a reduction of no more than 2 EPNdB, even at approach. This is because both houses and the atmosphere absorb the whine more effectively than the roar and the roar tends to dominate the unsuppressed noise. After power cutback in the takeoff operation, the reduction due to SAM might be anywhere from 0 to 2 EPNdB, depending on the degree of cutback and the distance from the aircraft. In our opinion, the bulk of the noise problem with the DC-9 results from the roar of the jet and meaningful benefits for most airport neighbors would require significant reductions in that jet noise as well as reductions in the whine.

Perhaps our best perspective on the benefits of the SAM treatment option to meet stage 2 as opposed to a new technology option to achieve stage 3 compliance can best be illustrated by figure 1. The figure shows footprints or contours of 90 EPNdB as generated

by several aircraft when all are operating over a range of 1,000 statute miles. The heavy line within each contour represents the runway. In each case the aircraft are landing from the left onto that runway and taking off toward the right with the gross weight necessary to take a full load of passengers to another airport 1,000 miles away.

The three aircraft shown above the heavy line, the 727-200, the DC-8 and the DC-9-50 are all powered by the older technology low bypass ratio engines. The DC-8 is a four-engine long-range aircraft with no nacelle treatment or SAM. The B727-200 is a three-engine medium-range aircraft equipped with the SAM treatment and in compliance with part 36 stage 2. The DC-9-50 is a two-engine short-range aircraft also equipped with the SAM treatment and in compliance with part 36, stage 2. It is interesting to note that the B727-200 and the DC-9-50 are both stage 2 aircraft and are in production today. Yet their 90 EPNdB contours are about the same size as that of the noncomplying DC-8 when all the aircraft perform the same mission. Because contours are sensitive to small changes in noise level, we attach very little significance to the small differences in the size of these three contours.

The three aircraft below the line are all powered by the new technology higher bypass ratio engines. The DC-10-10 is a first generation high bypass ratio engine powered aircraft. The new technology twin is a second generation high bypass ratio engine powered aircraft. The DC-9 Super 80 is powered by a P&W JT8D engine which has been refanned to increase its bypass ratio and which has incorporated an internal mixer to further lower its jet exhaust velocity. These are all stage 3 aircraft. Note that these three aircraft also have contours which are approximately equal in size but that they are only about one-fifth as large as those for the aircraft above the heavy line with the older technology. Further, if one extracts the area of a typical airport from the contour, the area outside the airport exposed to 90 EPNdB or more would be only about one-tenth as great for those aircraft utilizing the new technology. We feel this is a truly significant improvement in the airport noise problem.

Thus, we are convinced that it would be much better for all parties concerned to pursue a long-range program to get the fleet into compliance with stage 3. We would support features in the pending legislation which would favor the eventual stage 3 compliance.

We are, of course, aware of the regulatory situation and while we have never recommended the SAM retrofit as a cost-effective means of noise reduction, we have made it available to our DC-9 customers as a means of compliance with the noise standards of FAR part 91. We anticipate delivery of the first retrofit kit of this type in February of 1981. A production rate of 15 ship-sets per month can be achieved by June of 1981. The cost is about \$190 million, 1979 dollars, per aircraft not including spares or installation. While the kit does not increase the specific fuel consumption of the engine, it does add some 270 pounds to the weight of the aircraft. This weight increase results in a small fraction of 1-percent increase in fuel consumption. But because there are a lot of these aircraft in the fleet, we estimate that it would amount to

over 1 million gallons of fuel per year for the U.S. fleet of non-part 36 DC-9 aircraft.

Mr. FLORIO. Excuse me. We are going to have to take a break to vote. We will be back shortly.

[Brief recess.]

Mr. FLORIO. We will reconvene. Please feel free to continue in the summary fashion.

Mr. McPIKE. In the case of the DC-8, we do not foresee a market for the SAM retrofit. There is, however, an active program to re-engine the stretched DC-8 with the CFM-56 high bypass ratio engine. The DC-8 as reequipped with that engine, will not only comply with the stage III noise requirements, it will also offer a fuel savings of up to 25 percent.

Mr. FLORIO. How is that compatible with the last slide of the gentleman's presentation? It seemed to indicate definite negative tradeoff with regard to the fuel efficiency and the quieting associated with the type bypass engines.

Do you recall the last slide? I didn't comment at that point, but it seems to me that this is not compatible. What you are saying is that there is a definite positive benefit in terms of fuel efficiency. However it seems to me that the slide implied, if not stated, that fuel efficiency was not the case.

Mr. McPIKE. I would perhaps refer that question to—

Mr. RUSSELL. The slide was for a given technology, a given high bypass ratio technology. Mr. McPike is talking about change from a low bypass ratio engine to a high bypass ratio engine, which is a step in improvement in fuel efficiency.

Mr. FLORIO. What you are saying, even if you have a high bypass ratio, is that the quieter you make the engine, the less fuel efficient it is?

Mr. RUSSELL. That is right. Once you make the change from a low bypass ratio technology to a high bypass ratio technology, which that slide was, and continue to decrease noise beyond that point, the fuel efficiency deteriorates, it is going to cost money.

Mr. FLORIO. I can appreciate that. I am just wondering, certainly there is always the point of diminishing returns, that the high bypass engine we are talking about is capable of meeting the existing regulations, so why is it that anyone would even be concerned about ultimately going to having a silent engine? I don't think anyone is talking about that. I am not sure what the significance of the slide was, if, in fact, we concede that the high bypass engines can meet all existing or projected noise requirements and will still provide for a fuel efficiency benefit.

Mr. RUSSELL. I think the question was what is the impact of noise reduction on fuel efficiency, and the slide answers that question for one stage of technology. That is a high bypass ratio level of technology. The lower you go in noise with that technology the greater the fuel impact.

Mr. FLORIO. It may be that the question was not clearly phrased. I don't think the question was meant to imply what the ultimate benefit is in terms of fuel efficiency, of having a silent engine.

What was implied was that the tradeoff, of achieving the standards of the high bypass engine, in order to get to that point, to meet those standards, you can through a high bypass engine meet

those standards, still have a positive relationship in terms of fuel efficiency, and the slide indicates what you are saying now, if you want to go forever on words, you would start to lose. That is fine, and I am sure that is the case, in the sense it is almost irrelevant to what we are talking about in the context of this particular piece of legislation.

No one is asking for a silent engine. No one is saying that, at least at this point, and maybe that is one of your concerns. I didn't want to leave the impression the that slide was addressing a point we are trying to deal with. I also wouldn't want the record to reflect that you cannot meet the standards with a high bypass engine unless we have a negative fuel efficiency factor accepted, because that is not the case.

Mr. BLUMENTHAL. On the contrary, it is very much the case. It is very pertinent. There are certain of the airplanes that were produced prior to the definition of stage III, high bypass ratio engines, that met stage II, and then suffered a fuel penalty when going to stage III.

Mr. FLORIO. What you are saying is that they are high bypass engines?

Mr. BLUMENTHAL. As a matter of fact, the 747 specifically did not even meet stage II when it was first produced because it flew before stage II, before the FAR-36 was defined. Subsequently, it was modified to achieve stage II with noise treatment and then subsequently beyond that has incurred further changes in some of the models to meet stage III. Each of those changes involves a very positive detrimental penalty on fuel consumption.

Mr. FLORIO. Why is that?

Mr. BLUMENTHAL. Increases in weight, increases in drag—

Mr. FLORIO. My understanding from some of the information provided to us is that by just going from the low bypass to the high bypass almost by definition reduces noise and is also fuel efficient, the process is more fuel efficient.

Mr. BLUMENTHAL. I believe that there are two items being confused here. When you go from a low bypass to a high bypass on a re-engine program, there is a whole new avenue of questions that are opened and our 707, as on the DC-8, we went through several cycles of developing quiet nacelles to quiet those airplanes. None of them were saleable.

We also have embarked on a re-engining program which involves a very substantial increase in price for the re-engining, and some—let's say many—of the customers have determined that that is a very questionable step to take from an economic standpoint.

So the question of whether you save fuel has to be balanced by what the increase in the investment is.

Mr. FLORIO. I can understand that.

Mr. BLUMENTHAL. It is a very complex item. There is no question but what the high bypass installation saves fuel.

Mr. FLORIO. Well, that was something which wasn't exactly clear. I think you have made it very clear.

What you are saying then, is that fuel efficiency savings are a factor. What you are also suggesting is that the absolute costs may be something that has to be evaluated. I can understand and appreciate that.

Mr. McPIKE. We certainly concur that to try to extend the noise requirements beyond stage III at this point in time would raise serious questions of fuel efficiency. But certainly all of our data indicate that at this time when we start with a clean sheet of paper, the high bypass ratio engine will bring us not only compliance with stage III but also a substantial savings in fuel.

Mr. FLORIO. Your apprehensions are beyond stage III?

Mr. McPIKE. Yes sir, we have the same apprehensions.

Mr. LEE. By the same token, does that mean that the mix of the high bypass engine currently balanced off against stage III that you have reached the optimum in terms of fuel efficiency?

Mr. McPIKE. Yes sir, I think we are very close to that optimum. Any further increase in bypass ratio tends to go over the hill, so to speak, and not improve but decrease fuel efficiency.

Mr. LEE. The advent of stage IV, V, or VI, the fuel efficiency would go down, probably?

Mr. McPIKE. We do not see a practical approach to anything beyond stage III at this point in time.

Mr. LEE. OK.

Mr. McPIKE. We believe the seriousness of the aircraft noise problem and the noise and fuel benefits of the higher bypass engine will eventually eliminate the demand for older non-stage-III aircraft. We have been convinced of this for some time and our new aircraft offerings have been guided accordingly.

Mr. FLORIO. You say eventually. Without governmental intervention in terms of regulations, what do you regard as the time frame that you would be talking about, into the nineties, eighties? You said something about 15- or 20-year lives for some of these smaller airplanes?

Mr. McPIKE. Yes sir, I am referring now to the demand for new production aircraft. What I am suggesting is that because the Federal Government's general policy is one of non-preemption in noise—that is, they are indicating that individual airports must handle their own noise problems and balance their needs for transportation against their needs for noise—that we will eventually find individual airports discriminating against non-stage-III aircraft, and this in fact will put the airlines into a posture where they will no longer wish to purchase non-stage-III aircraft.

That, of course, will take a considerable period of time to happen, but I think eventually it will occur. We would expect that perhaps by sometime late in, the 1980 decade these pressures will take effect.

Of course, realizing that the FAA is conducting an investigation to determine whether or not there might be a production cutoff at some point in time, Federal intervention may occur sooner than the pressures from individual airports.

Mr. FLORIO. But for the initiative of the bill that we are considering, a Federal regulatory scheme seems fairly fixed to me. Really, what you are saying is that unless there is some modification of the waiver provision, two and three engines, as contemplated by legislation, the marketing decisions by the airlines in terms of ordering equipment will have to be made sooner rather than later.

On the other hand, if the waiver provisions are enacted, as contemplated in this bill, those purchase requirements would be

deferred, causing them to be made in a very disorganized way. As you suggest, if there is no uniform Federal approach to noise, each and every little town would be passing ordinances which would be somewhat disruptive.

When they are so disruptive to the airplanes, it will be in the industry's financial interest to start ordering some of these newer complying aircraft that will be made. It seems to me that it would be a very disorderly way to make marketing decisions, that when you are sued a sufficient number of times that it makes more sense to go out and buy new airplanes in order to save money. That is when you make the decision, when you say that you are convinced that the decision to buy will flow from local ordinances and local actions taken because of the void created by the Federal regulatory scheme being deviated from. Am I hitting on what you are talking about when you make references to the whole actions?

Mr. MCPHIE. Yes sir, I think we are speaking in the same general direction. I was referring really to the pressures coming from the individual airports for stage III. We have already seen pressures from the individual airports for stage II and those are consistent with the Federal Government's policy toward encouraging—I shouldn't say encouraging—requiring compliance with stage II.

At the moment there is nothing that I see in the Federal regulations, or for that matter in the current legislation, at least in the House side, which would actually encourage the airlines to go forward with stage III replacements as opposed to a stage II compliance.

Mr. HARR. Mr. Chairman, I think it is important perhaps here to say that, although I think your point is well taken, that about the added inducements that would be on a purchasing carrier to move to a new fleet or new element of the fleet sooner than he might otherwise have done so by local requirement, that is just one probably relatively small factor that would affect the pace of free change.

When we originally, several years ago, started looking at the projections of what the fleet replacement would normally have to be without regard to any acceleration of the pace by Federal regulations, requirements for noise reduction or anything else, you found a pattern that embraced all of the factors that are involved in carrier purchase of inventory, the principal one being the technological advances that make one piece of equipment more competitively attractive than another.

So I wouldn't want the record to be left making too much of this point as an overall element in the decision of the airline when to replace an aircraft or otherwise accommodate an aircraft to noise requirements. We have always been faced with the same situation, having a natural schedule—when I say natural I am talking about the economics now—a natural economic schedule that could be roughly projected with allowances for changes as technological advances came along, then you had an artificial schedule superimposed upon that natural schedule in order to accommodate the pressures for noise reduction.

Then you had evaluation of the penalties that would have to be paid one place or another, cost penalties, perhaps performance

penalties, and that is why we support this waiver for two and three engine aircraft, and that is what we are trying to evaluate.

Mr. FLORIO. The difficulty I have with support of the waiver, is a result of long lead times, great capital investment, in developing engine technology. It seems to me that this requires market stability and, in fact, you have been providing that market stability by virtue of knowing what it is that is required. You may categorize it as an artificial regulation with regard to noise but it happens to be the regulation you have got to live with.

Now, at the 11th hour, the thrust of the Senate and Public Works bills, is to modify the procedures which were to be adhered to. It seems to me that this has been disruptive of the airlines' planning which took place under the regulated system of rolling in quieter airplanes. It certainly has to be disruptive of what I hope you have been doing in terms of planning for the needs of the airline fleets in accordance with the schedule that is the law.

Therefore, I find it very difficult, particularly from the industry standpoint, to have the industry, which certainly has to have some minimum degree of stability, now, in a sense, endorse the disruptive factor of change in regulations which have already been published.

Mr. HARR. Well, may I respond to that, Mr. Chairman?

The regulations or formula that presently is on the books has been discussed for a period of time in a variety of contexts and through a variety of legislative sessions in which there have also been efforts to produce some financial formula that would aid in the accommodation by the carrier of this added expense of—premature in his view—premature accommodation of his fleet to requirements that didn't exist before.

That is no longer present. That is another big factor.

Mr. FLORIO. That is a vantage point from the airline industry.

Mr. HARR. That is right, and that is really what we are talking about.

Mr. FLORIO. Do you, in your capacity as manufacturers, make your production decisions on the basis of those types of things? Certainly it is a factor, and to lay it out as blatantly as possible, last year there was an effort to enact some legislation that would have provided some financial assistance to the airlines in complying; however, that is no longer available. Now, I suspect the airlines are less enthused about paying money without that kind of assistance. Are those the kind of factors that go into your decisions regarding what type of engines you will produce?

That is what I would like to concentrate on. It seems to me, from what I have heard and read, that you have the capacity to produce quieter, fuel-efficient engines and that there are two types of technology for bigger planes and for the smaller planes. It seems to me that the technology can be applied so that the smaller engines can be retooled to both comply with the noise standards and get the fuel-efficiency benefits. It seems to me that you have the technology. What you need is the market, and varying from the regulations that are now in a stage of implementation is going to disrupt your market. The best thing the manufacturing industry can have is the certainty of those regulations.

So in a sense, you have a captive market. You don't want to phrase it that way, but the airlines have no choice but to buy these quieter airplanes or re-engine airplanes.

Therefore, for the industry to endorse the waivers, to endorse deviations from the stable regulatory implementation, is something I have a difficult time understanding.

Mr. HARR. I am going to let my colleagues speak to it. One element of the market, Mr. Chairman, obviously is the customer who is financially able to pay for it and one element in the development of any aircraft is—certainly a very expensive process in developing new aircraft or a new engine—is the capacity of the market to purchase it, not just the willingness or not just the Federal requirements that we do so, but their financial capacity.

Anybody else want to take a crack at this?

Mr. TITCOMB. I think maybe I can shed a little light on your question from the standpoint of what happened with our retrofit kits.

At Pratt & Whitney, when the retrofit consideration with SAM was under consideration by the Congress, we did not support it. The reason we did not support it is that the economic health of our customers is vital to us. Their future wellbeing is vital to us because it gives them the capability to buy our products.

But if they are forced to buy a product of ours that doesn't help their productivity, that doesn't help their economic future; then it is a short-term benefit to us and of very little interest.

Mr. FLORIO. If the waiver is provided, will there be a deferring of the decisions to make the new purchase? It may very well be that the retrofit requirements are going to be stiff. The airlines must make the decision whether to spend the money on retrofitting or to order new engines or order new airplanes. The waiver initiative permits the deferring of those decisions, providing the air carriers with the ability to defer that which is adversely impacting upon your industry.

Mr. TITCOMB. That is possibly correct. I was addressing the retrofit question and why we aren't standing up and saying it should be continued. It is nonproductive.

Mr. FLORIO. There were those who said that the retrofit decisions, were being deferred as a result of the waiver approach.

Mr. MCPHIE. May I address that question now. The requirement for the four-engine aircraft is that they be in compliance by 1985. This, of course, was promulgated in 1976. It did provide, I think, sufficient time because we now see that the carriers, in the case of the four-engine aircraft, are opting to reengine for the new technology, in the case of stretched DC-8. In the other cases it appears today there will be replacement by 1985 for the bulk of those four-engine aircraft.

In the case of the two- and three-engine aircraft, on the other hand, the dates were made much sooner—they have got to be completed by 1983. There is not enough time by 1983 to provide new stage III aircraft for those. As a consequence the carriers are being forced into a situation where their only real option to comply with the regulation is to go the SAM retrofit, which is nonproductive.

The waiver provisions as proposed would at least provide an option so some of the air carriers can elect to go to the really quieter aircraft, even though it involves some delay.

We think that is really better for the airport neighbor than to force the carriers to go the SAM retrofit option and accomplish it by 1983.

Mr. FLORIO. The point with regard to the waiver provision, then if one exercises that waiver opportunity and doesn't retrofit, because one doesn't feel that one is engined up enough or retooled enough to apply quiet engines to the smaller engines, aren't we talking about being into the nineties before we have airplanes, relatively smaller airplanes, that are quieter?

Mr. MCPIKE. No sir, you have opened the way to my next paragraph, however. We launched the DC-9 Super 80 which is an aircraft in approximately the same size category as the 727, which utilizes the Pratt & Whitney Refanned JT8D engine and will be a stage III aircraft.

Mr. FLORIO. When will that be available?

Mr. MCPIKE. The aircraft will be flying this summer.

Mr. FLORIO. Why would we need waivers?

Mr. MCPIKE. Well, sir, it will be flying this summer but let me go on. We have also offered to some air carriers, a version of the Super 80 closer to the 100-passenger category. Now, we have not actually given the go-ahead to production for that aircraft, we have offered it to some airlines. I should point out primarily our offers were to foreign carriers. I understand you had testimony a couple of weeks ago, from ATA to the effect there was not a 100-passenger aircraft available. That testimony was quite understandable because we had not been promoting that aircraft in this country. But in fact we do have such an aircraft available, we call it DC-9 Super 80 SF.

Mr. FLORIO. You are saying that the plane being available within the near future, that the purchase requirements or the purchase decision by the airlines will be inhibited by virtue of the waiver provision, if in fact you are saying there is no waiver provision, you have either to retrofit or come up with new engines or new airplanes.

In fact we all agree—I am not sure we do—but for argument's sake, retrofitting is not productive. Doesn't that induce the airlines to take advantage of the type of planes you say are almost available, if not available now?

Mr. MCPIKE. They will not be available in any quantity in time to meet a 1983 deadline. While we have first flight this summer, first delivery is yet another year away. Then we will be producing on the order of 60 aircraft per year. There is simply no time between now and 1983 to produce enough aircraft to fulfill the requirement by that time period, even assuming that the airline carriers had the financial health and could, in fact, replace. At least there is an advantage to giving the option to those carriers who are in a position to purchase the aircraft that would offer them the fuel benefits and the noise benefits of a stage III aircraft.

Mr. FLORIO. Gentlemen, we have another vote, we will be right back.

[Brief recess.]

Mr. FLORIO. Thank you very much for your indulgence of our schedule.

A point that has been brought to my attention, and I am very appreciative of the points that you have been making about the inefficiency of requiring people to retrofit when there are other modes, or other types, of energy devices that can be utilized.

My understanding, correct me if I am incorrect, is that FAA has the ability under current law to grant waivers if they are persuaded that it would not be in the public interest to require retrofitting, and if contracts are signed and there is some indication that the airlines are in the process of going forward.

Mr. McPIKE. Yes sir, my understanding would be in general certainly that the FAA always has the authority to waive any requirement and, as I understand it, they technically have the authority to waive the two- and three-engine aircraft requirement of 1983 to 1985.

I don't think that is clearly appreciated necessarily by the air carriers and ourselves, or that people are willing to count on that authority within the FAA at this time.

Mr. FLORIO. I am sorry. If the rest of the gentlemen would like to proceed in a summary fashion, we would be happy to expedite the business.

Mr. McPIKE. I will only summarize that there is information included in my testimony to show our variety of stage III aircraft which are available. Certainly we have operated under the principle at McDonnell Douglas, that all aircraft for the 1980's and beyond should comply with the stage III requirements.

We would be willing to support legislation to require that all aircraft produced for the U.S. domestic use should comply with stage III after a realistically determined date.

Thank you, Mr. Chairman.

[Testimony resumes on p. 315.]

[Mr. McPike's prepared statement and attachments follow:]

COMMENTS ON THE AVAILABLE METHODS OF AIRCRAFT NOISE
REDUCTION AND ON THE AVAILABILITY OF NEW QUIET STAGE 3
AIRCRAFT FROM MCDONNELL DOUGLAS

STATEMENT PREPARED FOR
THE SUBCOMMITTEE ON TRANSPORTATION AND COMMERCE
OF THE
HOUSE COMMITTEE ON INTERSTATE AND FOREIGN COMMERCE

BY

AUBERT L. McPIKE
DIRECTOR - INDUSTRY ASSOCIATION ACTIVITIES
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LONG BEACH, CA.

June 27, 1979

Mr. Chairman and members of the Subcommittee on Transportation and Commerce, my name is Aubert L. McPike. I am Director of Industry Association Activities at the Douglas Aircraft Company of the McDonnell Douglas Corporation. It is a pleasure to appear before your subcommittee on the subject of aircraft noise abatement.

My statement this morning is based primarily upon the statement of Mr. John C. Brizendine, President of the Douglas Aircraft Company, as submitted to you by letter of June 8, 1979. Mr. Chairman, I will expand on several of the points in that statement in light of the questions raised in your letter of June 15 to Mr. Lloyd Kuhn of the Aerospace Industries Association.

McDonnell Douglas has been following the development of aircraft and airport noise legislation closely over a period of several years. Some of the provisions of the legislation currently under consideration would undoubtedly have a major impact on the future development of the air transportation system. However, our review of the legislation indicates that most of the provisions would impact more directly on the air carriers than on the manufacturers. For those provisions we have no special advice to offer and would prefer to yield to the views of the air carriers who are more directly involved.

Our comments are thus limited to the present state of engine noise technology, the availability of quieter aircraft and the impact of noise regulations on aircraft fuel efficiency.

To understand the present state of engine noise technology, it can be helpful to consider the two distinctive noise sources associated with the turbofan engines which power today's jet transport aircraft. One is the low frequency roar of the jet as it is exhausted from the rear of the engine at high velocity. It is the noise most noticeable as a jet aircraft takes off. The other is the high pitched

whine of the turbomachinery within the engine. The whine is more normally associated with the aircraft during landing at low engine power.

The new widebody aircraft such as the DC-10 have been widely recognized as being much quieter than the aircraft they are replacing. This is because they are powered by the new technology high bypass ratio engines. In this engine, most of the jet exhaust energy is absorbed by a turbine to drive the larger fan. The high bypass ratio engine, therefore, by the nature of its design, has much lower jet exhaust velocities. As a result the jet roar from these engines is much lower than that of the low bypass ratio engines. These engines also generate much less whine than the earlier low bypass ratio engines for two reasons. First, the turbomachinery has been designed with advanced technology to minimize noise generation and second, the nacelles of these engines incorporate sound absorbent material (SAM) to absorb the high pitched whine which is generated by the engine.

Thus, both the roar and the whine of these high bypass ratio engines are substantially reduced. There is an average reduction of about 15 decibels in the landing and takeoff noise of the DC-10 compared to the DC-8 as a result of the switch to the high bypass ratio engine.

If it were practical on a short term basis to either replace the current fleet with aircraft powered by high bypass ratio engines or to replace the engines on the current aircraft with high bypass ratio engines, we would expect to see a very dramatic reduction in the airport community noise problem. Unfortunately, that is not practical. Only rarely is it realistic to re-engine an existing aircraft and the service life of a transport aircraft is ordinarily 15 to 20 years so it takes a long time to replace the entire fleet. Additionally, the air carrier industry, like the rest of the economy, experienced a major recession in this decade which greatly slowed the conversion to new technology aircraft. Although it has now been some ten years since the high bypass ratio engine entered

service, less than 10 percent of the jet transport aircraft operations in this country are performed by aircraft utilizing it. Thus, the overall airport noise problem has not been significantly reduced and there have been increasingly strong pressures for any action which would provide any degree of noise reduction.

These pressures led to the FAA regulations requiring that all aircraft in the U.S. domestic fleet be brought into compliance with the Stage 2 limits of Part 36 by 1985. Such compliance can be accomplished by the incorporation of SAM in the nacelles of the existing engines as well as by re-engining or replacing the aircraft. While we believe replacement with Stage 3 aircraft or re-engining to Stage 3 standards would provide great benefits to the airport neighbors we do not believe that the use of SAM suppression to bring the aircraft into compliance with the Stage 2 standards would provide meaningful benefits for most airport neighbors.

The SAM treatment which achieves Stage 2 compliance for the DC-9 reduces the whine of the turbomachinery but has no effect on the roar of the jet exhaust. At takeoff power the jet roar completely dominates the noise of the engine and the SAM treatment provides no noise reduction. At the low power used for landing, the whine does contribute to the total noise and the noise reduction due to SAM at the Part 36 location is between 4 and 5 EPNdB. However, in the Part 36 approach measurement, the aircraft passes less than 400 feet from the microphone. Our studies show that beyond the 400 ft. distance, or inside houses, the noise reduction is less than the 4 to 5 EPNdB. In fact, the average airport neighbor would probably experience a reduction of no more than 2 EPNdB. This is because both houses and the atmosphere absorb the whine more effectively than the roar and the roar tends to dominate the unsuppressed noise. After power cutback in the takeoff operation, the reduction due to SAM might be anywhere from 0 to 2 EPNdB depending on the degree of cutback and the distance from the aircraft. In our opinion, the bulk of the noise problem with

the DC-9 results from the roar of the jet and meaningful benefits for most airport neighbors would require significant reductions in that jet noise as well as reductions in the whine.

Perhaps our perspective on the benefits of the SAM treatment option to meet Stage 2 as opposed to a new technology option to achieve Stage 3 compliance can best be illustrated by Figure 1. The figure shows footprints or contours of 90 EPNdB as generated by several aircraft when all are operating over a range of 1000 statute miles. The heavy line within each contour represents the runway. In each case the aircraft are landing from the left onto that runway and taking off toward the right with the gross weight necessary to take a full load of passengers to another airport 1000 miles away.

The three aircraft shown above the heavy line, the 727-200, the DC-8 and the DC-9-50, are all powered by the older technology low bypass ratio engines. The DC-8 is a 4-engine long range aircraft with no nacelle treatment. The B727-200 is a 3-engine medium range aircraft equipped with the SAM treatment and in compliance with Part 36 Stage 2. The DC-9-50 is a 2-engine short range aircraft also equipped with the SAM treatment and in compliance with Part 36 Stage 2. It is interesting to note that the B727-200 and the DC-9-50 are both Stage 2 aircraft and are in production today. Yet their 90 EPNdB contours are about the same size as that of the non-complying DC-8 when all the aircraft perform the same mission. Because contours are sensitive to small changes in noise level we attach very little significance to the small differences in the size of these three contours.

The three aircraft below the line are all powered by the new technology higher bypass ratio engines. The DC-10-10 is a first generation high bypass ratio engine powered aircraft. The new technology twin is a second generation high bypass ratio engine powered aircraft. The DC-9 Super 80 is powered by a JT8D engine which has been refanned to increase its bypass ratio and which

has incorporated an internal mixer to further lower its jet exhaust velocity. These are all Stage 3 aircraft. Note that these three aircraft also have contours which are about equal in size but that they are only about one-fifth as large as those for the aircraft above the heavy line with the older technology. Further, if one extracts the area of a typical airport from the contour, the area outside the airport exposed to 90 EPNdB or more would be only about one-tenth as great for those aircraft utilizing the new technology. This is truly significant.

Thus, we are convinced that it would be much better for all parties concerned to pursue a long range program to get the Stage 3 technology into the fleet rather than a short range program to get the fleet into compliance with Stage 2. We would support features in the pending legislation which would favor the eventual Stage 3 compliance.

We are, of course, aware of the regulatory situation and while we have never recommended the SAM retrofit as a cost effective means of noise reduction, we have made it available to our DC-9 operators as a means of compliance with the noise standards of FAR Part 91. We anticipate delivery of the first retrofit kit of this type in February of 1981. A production rate of 15 ship sets per month can be achieved by June of 1981. The cost is about \$190,000 (1979 dollars) per aircraft not including spares or installation. While the kit does not increase the specific fuel consumption of the engine, it does add about 270 lbs. to the weight of the aircraft. This weight increase results in a small fraction of one percent increase in fuel consumption. However, we estimate that it would amount to over one million gallons of fuel per year for the U.S. fleet of non-Part 36 DC-9 aircraft.

In the case of the DC-8, we do not foresee a market for a SAM retrofit kit. However, there is an active program to re-engine the aircraft with the CFM-56 high bypass ratio engine. While it is rarely practical to re-engine an existing aircraft, the stretched DC-8/CFM-56 engine combination provides a highly viable aircraft as described in the attached brochure. A number of carriers

have already placed orders for this modification for stretched versions of the DC-8 at a cost of around 9 million dollars (1978 dollars) per aircraft. The re-engined aircraft will not only comply with Stage 3 but also provides an improvement of up to 25 percent in fuel consumption compared to the unmodified aircraft.

We believe that the seriousness of the airport noise problem and noise and fuel benefits of the higher bypass ratio engine will eventually eliminate the demand for the older non-Stage 3 aircraft. We have been convinced of this for some time and our new aircraft offerings have been guided accordingly.

In 1977 we launched the DC-9 Super 80 program. The DC-9 Super 80 will be the first aircraft to bring new Stage 3 noise compliance to the smaller size commercial jet transport and is, in fact, the only Stage 3 aircraft being offered in its class at this time. First delivery of this new DC-9 will be in the spring of 1980. Shortly thereafter we will reach a production rate of 60 aircraft per year. This aircraft will carry from 135 to 172 passengers over maximum ranges of from 1200 to 2000 miles.

As indicated earlier, the reduced noise of the DC-9 Super 80 represents a major step toward reducing the airport community noise problem. Our studies show that noise exposure areas around airports can be dramatically reduced by the substitution of the DC-9 Super 80 for aircraft currently supplying the same service. Attached is a short brochure which illustrates the magnitude of the improvements which can be expected.

The DC-9 Super 80 is ideal for many air carrier applications. However, there is also a need for quiet replacement aircraft of a smaller capacity. Particular attention has been drawn to the need for a quiet Stage 3 aircraft in the 100-seat category to serve small communities. We have, in fact, offered a version of the DC-9 Super 80 known as the DC-9 Super 80SF (the SF refers to Short Fuselage) which would have a capacity of just over 100 passengers in the normal

mixed class configuration of first class and coach. This aircraft, being smaller but with the same advanced technology would be even quieter than the standard version of the DC-9 Super 80. The DC-9 Super 80SF program has been offered to a number of airlines and it will be launched if a suitable market develops. It would take on the order of three years to get a derivative of this type into production.

The fuel efficiency of the DC-9 Super 80 and Super 80SF are shown in Figure 2 for a 500 nautical mile mission. The data are shown in terms of passenger miles per gallon for both 60% and 100% load factors. For comparison purposes, data are also shown for current aircraft which are nearly comparable in terms of passenger capacity.

We are also conducting early design studies of a totally new, advanced transport configuration we refer to as the ATMR for Advanced Technology Medium Range. This aircraft would use advanced technology levels beyond those of current aircraft programs to provide an even further improved level of fuel efficiency in an aircraft capable of carrying 160 to 180 passengers over ranges between 300 and 2500 nautical miles. This aircraft could provide an excellent replacement for many aircraft, currently in the fleet and in production, which cannot meet the Stage 3 noise standards. However, this airplane will probably not be available in significant quantities until the mid-1980's.

Typically, an all new aircraft development requires about four years from launching to certification, after one to three years of requirements definition, specifications and sales negotiation. Any all new aircraft development will require a billion dollars or more investment.

There are, of course, a number of Stage 3 aircraft already being produced in the larger size category. Our DC-10-10 and DC-10-40 are Stage 3 aircraft. Our DC-10-30 is very close to compliance with the Stage 3 standards and could probably be brought into compliance over a period of three to four years.

We are also moving into a program to offer stretched versions of the DC-10 and those will all be Stage 3 aircraft. Figure 2 shows the passenger capacity and range of the four versions of the stretched DC-10 being pursued along with the same values for the other aircraft discussed. Included, too, are data for the stretched DC-8's as re-engined with the CFM-56.

All of the aircraft shown on the chart do, or will, comply with the Stage 3 standards. The actual operating range of each aircraft is represented by the point at the nose of the aircraft. While a number of the aircraft have not yet been committed to production we have included only those which we expect to become full production programs.

Mr. Chairman, McDonnell Douglas is deeply concerned about the long range impact of the airport noise problem on our air transportation system. We see an increasing number of cases where airport development is blocked and where there are restrictions on aircraft operations because of adverse community reaction to noise. We believe we have a social responsibility to produce aircraft which are as quiet as is practically possible. In addition, we believe the future viability of our air transportation system depends upon meaningful reductions in airport community noise.

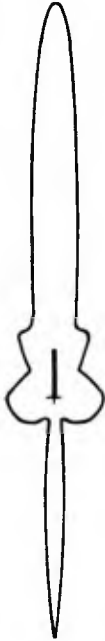
We have operated for some time under the principle that any subsonic jet transport aircraft we develop (new or derivative) for the 1980's and beyond must meet Stage 3 noise standards. We would support legislation that requires all aircraft produced for U.S. domestic uses (new or current models) to comply with Stage 3 after a realistically determined date.

Figure 2

90 EPNdB NOISE CONTOURS

1000-STATUTE-MILE MISSION ATA OPERATING PROCEDURES

LOW-BYPASS RATIO
TURBOFAN-POWERED
AIRCRAFT



B727-200

DC-8



DC-9-50



HIGHER-BYPASS RATIO
TURBOFAN-POWERED
AIRCRAFT

DC-10-10



NEW TECHNOLOGY TWIN

DC-9 SUPER 80



FIGURE 1.

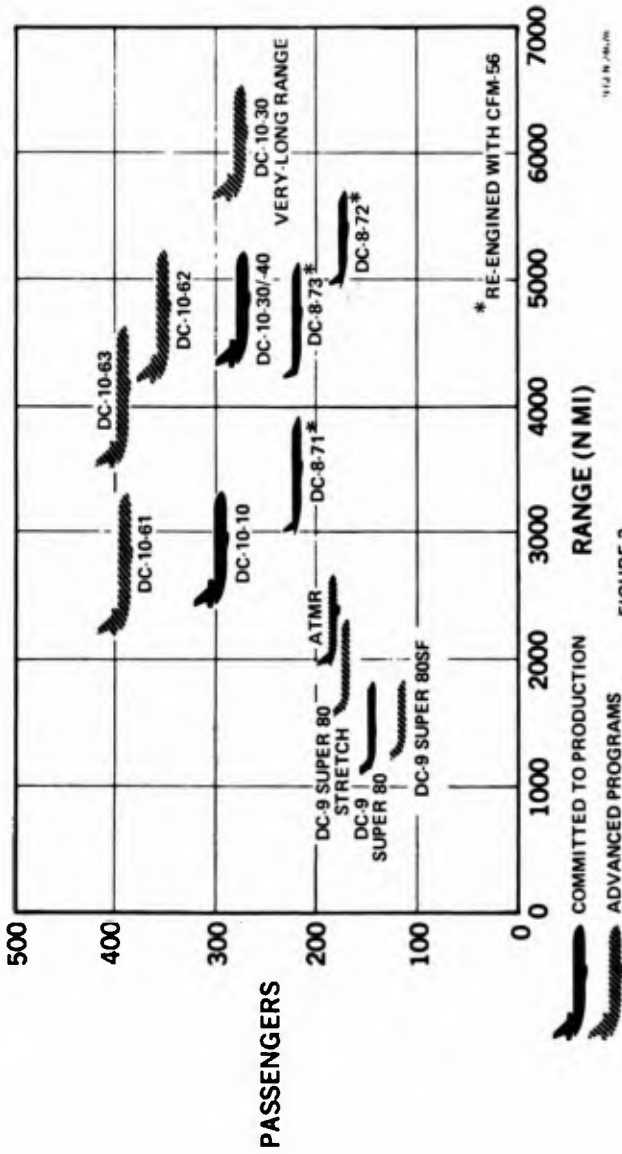
FUEL EFFICIENCY - PASSENGER MILES PER GALLON

500 Nautical Mile Mission

Mixed 1st Class/Coach Seating

<u>Aircraft</u>	<u>Number of Seats</u>	<u>Passenger Statute Miles per Gallon</u>	
		<u>60% Load Factor</u>	<u>100% Load Factor</u>
B727-200ADV	143	26	44
DC-9-30	94	28	47
DC-9 Super 80SF	105	30	50
DC-9 Super 80	136	35	58

MCDONNELL DOUGLAS COMMERCIAL TRANSPORTS WHICH WILL COMPLY WITH STAGE 3, PART 36



Mr. FLORIO. You are implying that the dates which are on line are not realistic?

Mr. MCPIKE. No sir, I was referring to the stage III. At the moment, there is no requirement for stage III compliance for production aircraft.

Mr. FLORIO. Would any of the other gentlemen like to make comments?

Mr. HARR. Mr. Rodenbaugh.

STATEMENT OF WILLIAM L. RODENBAUGH

Mr. RODENBAUGH. Mr. Chairman, my name is William Rodenbaugh and I am a member of the team that performs the long range planning for the General Electric Co.'s aircraft engine group.

We have prepared a written statement which contains information on our background in aircraft engines and noise abatement. My discussion will be a summary of that document.

As a subcontractor to the total aircraft system, we will restrict our discussion to that point of the problem that comes from the engine. General Electric has been actively working on aircraft engine noise abatement since the 1950's when the military began exhaust jet noise investigations.

In 1964 GE tested a demonstrator model of the first high-bypass ratio turbofan in the world, and in 1965 tested the full size 40,000-pound thrust TF39 engine. In the mid-1960's the development of the CF6 high-bypass ratio turbofan family of engines was begun, aimed at the new wide-bodied transports, which were then on the drawing boards of the airframers.

Aircraft noise reduction had become a national objective. First came the 40,000-pound thrust class CF606 engine for the DC-10 transport, followed by the 50,000-pound thrust class CF6-50 engine for the A300, DC-10-30 and 747-200. The high-bypass ratio engines have significantly reduced aircraft noise in addition to being very fuel efficient.

Today, General Electric—along with continued work on these engines—is in the midst of the development of growth CF6 engines; the 8,000-pound thrust class CF34 engine for commuter application; and the 22,000-pound thrust CFM56 engine, jointly with SNECMA of France. By the end of this decade, we will have in service, or certified and available for service, a spectrum of quiet, high-bypass ratio engines from 8,000 to over 50,000 pounds of thrust.

Noise from jet engines comes from principally two sources. The jet exhaust and the rotating machinery of the engine. The jet exhaust and rotating machinery noise are significant in early turbofan engines of the 1960's. The rotating machinery is the major noise source in high-bypass turbofan engines like our CF6.

The turbofan or fan jet engine produces less jet noise because it extracts energy from the high velocity jet core to drive a highly efficient fan. This increases the engine airflow and surrounds the lower velocity jet exhaust stream with a ring of even lower velocity cold air expelled by the fan. The fan air serves to reduce the exhaust stream noise while increasing the thrust of the engine.

In the turbojet engine, there is no fan producing cooler air surrounding or cushioning the hot exhaust gases as they leave the

core jet engine, and thus the loud shearing noise is produced that is typical of early generation turbojet engine.

We have included illustrations in the printed statement for clarification. The rotating machinery noise is a radiated sound and thus if we can get sound-absorbing material between it and the outside world, that component of noise can be reduced.

Increasing bypass ratio reduced noise, reduces it more as bypass, and inevitably diameter, is increased. Since rotating machinery-type noise becomes more of the total as bypass ratio is increased, acoustic material becomes more effective as bypass is increased.

The aircraft engine industry has made progress accompanied by significant environmental payoffs:

High bypass engine cycle—inherently quieter; low noise fan designs in use; acoustically treated engine nacelles in use; core engine noise reduction techniques identified; current technology aircraft meeting FAR36-1969 (stage II); advanced technology in place to meet FAR36-1978 (stage III) with new engines now in design/development phase.

It is also worth noting that as bypass ratio is increased, propulsion efficiency is also improved. Thus, we make two gains—noise is more controllable and fuel use efficiency is improved—a most important point in today's escalating fuel cost environment.

We are confident of our technical capability to control noise via engine cycle choice and technology progress and we must remember that a new commercial engine of modern technology is not undertaken lightly. It takes 5 to 7 years of dedicated effort and investment commitment of several \$100 million. Consistency in market potential and regulatory intent is most important to engine manufacturers as we strive to provide the air transport industry with the best possible balance of attributes in aircraft propulsion products.

General Electric has been sensitive to—and responsive to—the noise concerns of the airline industry. Our competitors appear to be equally perceptive. Incorporation of noise reduction technologies is controlled by complex interaction of social, economic, marketplace, and regulatory initiatives. The aircraft engine industry will continue to make integrated gains based on this interactive environment.

Thank you, Mr. Chairman.

[Testimony resumes on p. 323.]

[Mr. Rodenbaugh's prepared statement and attachments follow:]

Statement of
William L. Rodenbaugh
General Electric Company

Some Thoughts About Aircraft Noise

Presented to:

**The Committee on Interstate and
Foreign Commerce; Subcommittee
on Transportation and Commerce**

U.S. House of Representatives

June 27, 1979

GENERAL  ELECTRIC

General Electric welcomes the opportunity to participate with the Aerospace Industries Association of America in sharing some thoughts about aircraft noise. The subject of aircraft noise is of significant interest to many segments of the U.S. Society. Its impact is blunt; the elements of its origin and its reduction are complex.

General Electric, though most often thought of in connection with lamps, appliances and heavy industrial power generation, has been active in the field of aircraft gas turbines since we produced the first American jet engine back in 1941. General Electric has produced nearly 85,000 jet engines for more than 80 different types of military and commercial aircraft. It currently has three new military engines under development. In the commercial field, it has the CF6 series of engines in production for the A300, 747 and DC-10 commercial aircraft, as well as continued production or support for the CJ805, CF700, CJ610 and CT58 commercial engines. In addition, GE is cooperating in a joint program with the French company, SNECMA, on the CFM56 engines for airline service in the 1980's.

Look, for a moment, at Illustration 1 to appreciate where the noise originates. The solution to aircraft noise varies, depending on whether we are concerned with takeoff, approach, or sideline noise. (Illustration 2)

As a subcontractor to the total aircraft system, we will restrict our discussion to that portion of the problem that comes from the engine.

First, some background might be helpful. General Electric has been actively working on aircraft engine noise abatement since the 1950's, when military began exhaust jet noise investigations. In the late 1950's and early 1960's, the CJ805-3 turbojet engine for the Convair 440 aircraft and the CJ805-23 turbofan for the Convair 990 were developed. By that time, noise had become a full-fledged design constraint, and noise reduction features were developed for these commercial turbojet and turbofan engines.

In 1964, GE tested a demonstrator model of the first high bypass ratio turbofan in the world, and in 1965 tested the full-size 40,000-pound thrust TF39 engine. In the mid-1960's the development of the CF6 high bypass ratio turbofan family of engines was begun, aimed at the new wide-bodied transports, which were then on the drawing boards of the airframers. Aircraft noise reduction had become a national objective.

First came the 40,000-pound thrust class CF6-6 engine for the DC-10 transport, followed by the 50,000-pound thrust class CF6-50 engine for the A300, DC-10-30 and 747-200. The high bypass ratio engines have significantly reduced aircraft noise compared to the low bypass ratio engines of the older narrow-bodied aircraft, in addition to being very fuel efficient. These widebody aircraft meet FAR Part 36 requirements with margin.

Today, General Electric — along with continued work on these engines — is in the midst of the development of growth CF6 engines; the 6,000-pound thrust class CF34 engine for feederline application; and the 22,000-pound thrust CFM56 engine, jointly with SNECMA of France. By the end of this decade, we will have in service, or certified and available for service, a spectrum of quiet, high bypass ratio engines from 6,000 to over 50,000 pounds of thrust.

The GE acoustic technology base has been enriched by numerous U.S. Government programs, including the NASA/GE Experimental Quiet Engine, Quiet Clean Short-Haul Experimental Engine, the FAA/GE Supersonic Transport Noise Reduction Technology, Core Engine Noise Control, and High Velocity Jet Noise programs. The continuing Independent Research and Development (IR&D) programs, at the development facilities in Massachusetts and Ohio and at the Corporate Research and Development Center in New York, funded jointly by General Electric and the Government, have yielded important technology. All of these activities have contributed to the technology base for aircraft noise abatement.

All in all, a great amount of Government and industry effort has been expended over the past 10-15 years in addressing the problem of noise generated by commercial aircraft. Noise from jet engines comes principally from two sources: the jet exhaust and the rotating machinery of the engine. (Illustration 3). The jet exhaust and rotating machinery noise are significant in early turbofan engines of the 1960's. The rotating machinery is the major noise source in high bypass turbofan engines like our CF6 in the A300, 747 and DC-10. The turbofan or fanjet engine produces less jet noise because it extracts energy from the high velocity jet core to drive a highly efficient fan. This increases the engine airflow and surrounds the lower velocity jet exhaust stream with a "ring" of even lower velocity cold air expelled by the fan. This fan air serves to

reduce the exhaust stream noise while increasing the thrust of the engine. In the turbojet engine, there is no fan producing cooler air surrounding or cushioning the hot exhaust gases as they leave the core jet engine, and thus the loud "shearing" noise is produced that is typical of early generation turbojet engines.

The rotating machinery noise is a radiated sound and thus if we can get Sound Absorbing Material (SAM) between it and the outside world, that component of noise can be reduced. (Illustration 4).

The results of increasing bypass ratio are shown in Illustration 5. The noise reduction is dramatic as bypass (and, inevitably, diameter) is increased. Since rotating machinery-type noise becomes more of the total as bypass ratio is increased, acoustic material becomes more effective as bypass is increased as noted in Illustration 5.

Another interesting way of showing the effectiveness of high bypass engines is a comparison of "footprints" of older and newer engine designs. (Illustration 6).

The aircraft engine industry has been diligently working the problem of noise and progress in technology has been accompanied by significant environmental payoffs:

- High Bypass Engine Cycle - Inherently Quieter
- Low Noise Fan Designs in Use
- Acoustically Treated Engine Nacelles in Use
- Core Engine Noise Reduction Techniques Identified
- Current Technology Aircraft Meeting FAR36-1969
- Advanced Technology in Place to Meet FAR36-1978 with New Engines Now in Design/Development Phase

It is also worth noting that as bypass ratio is increased, propulsion efficiency is also improved. Thus, we make two gains — noise is more controllable and fuel use efficiency is improved. Illustration 7 shows that the second generation high bypass engines have much better fuel consumption characteristics — a most important point in today's escalating fuel cost environment.

While we in the industry are confident of our technical capability to control noise via engine cycle choice and technology progress, we must also remember that a new commercial engine of modern technology is not undertaken lightly. It takes 5-7 years of dedicated effort and an investment commitment of several hundred million dollars. Consistency in market potential and regulatory intent is most important to engine manufacturers as we strive to provide the air transport industry with the best possible balance of attributes in aircraft propulsion products.

General Electric has been sensitive to — and responsive to — the noise concerns of the airline industry. Our competitors appear to be equally perceptive. Incorporation of noise reduction technologies is controlled by complex interaction of social, economic, marketplace and regulatory initiatives. The aircraft engine industry will continue to make integrated gains based on this interactive environment.

Figure 1

Where Does Aircraft Noise Originate

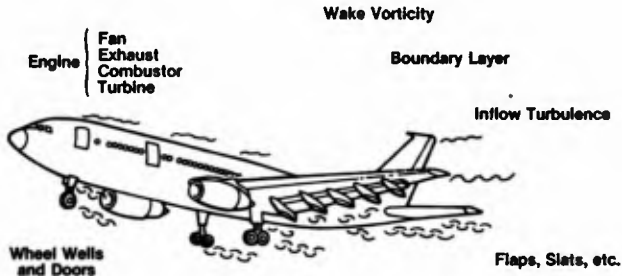


Figure 2

Typical Component Noise Distribution in Current Wide-Body Aircraft

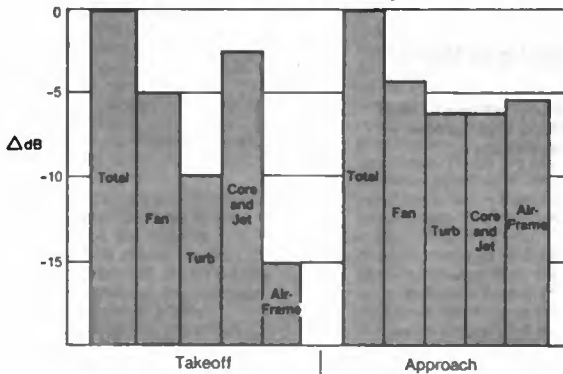


Figure 3

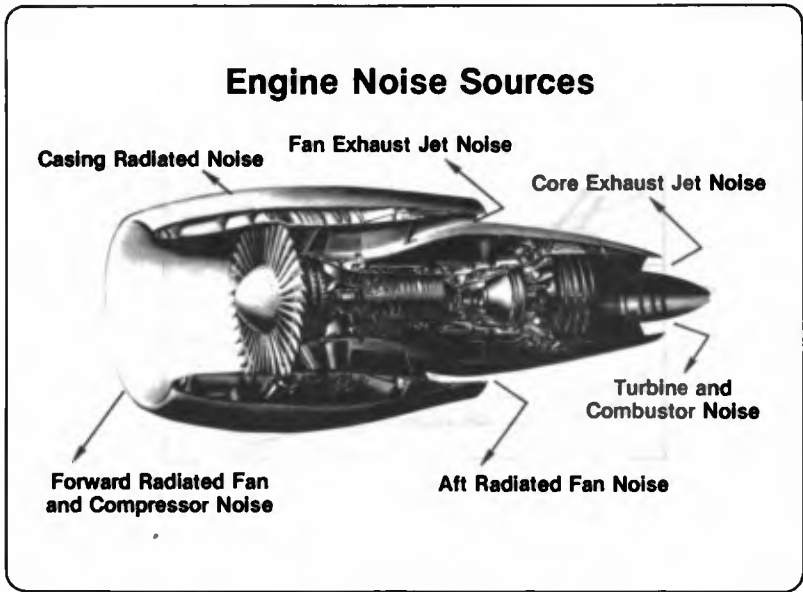


Figure 4

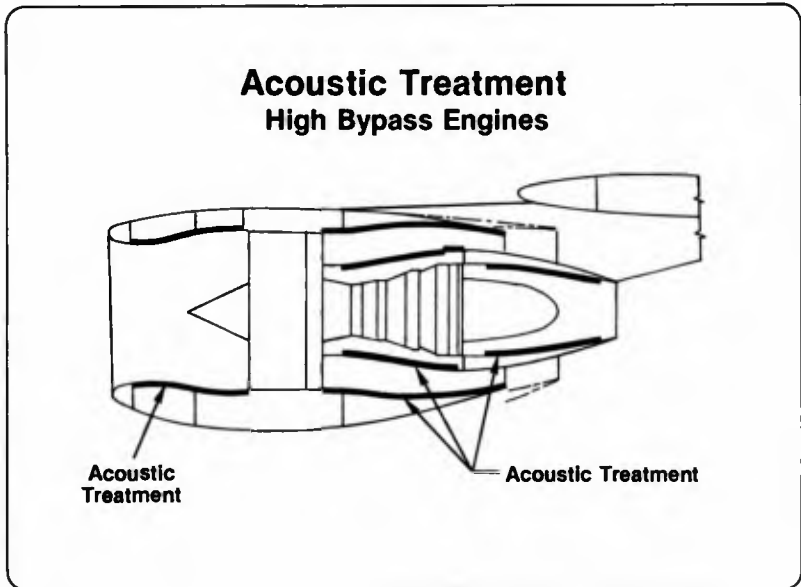


Figure 5

Noise Control at Full Power Takeoff

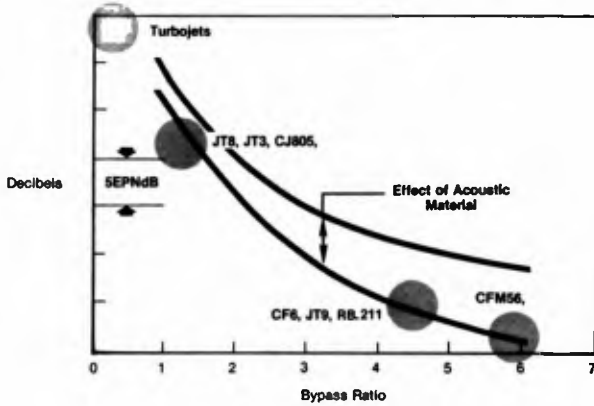
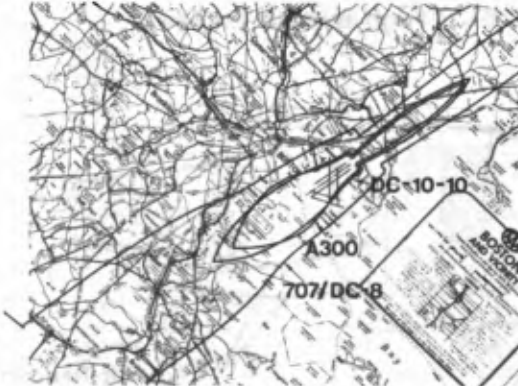


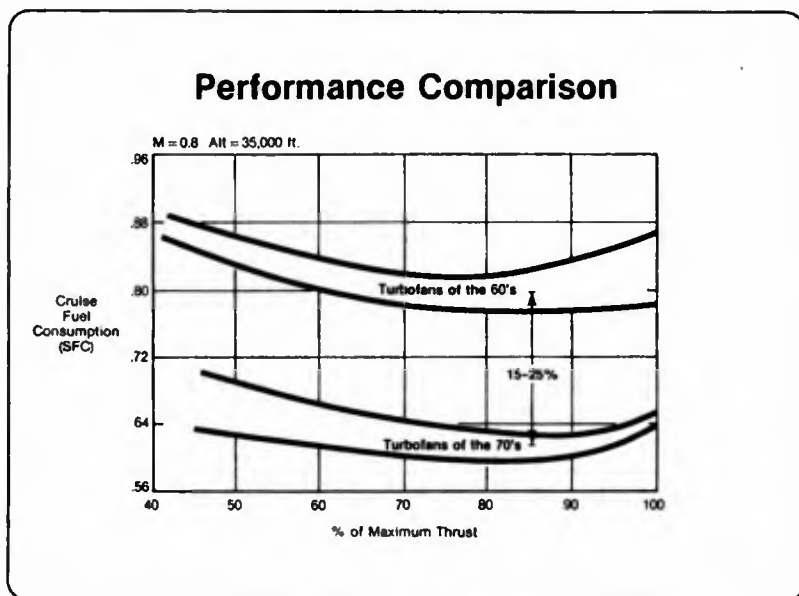
Figure 6

Area Exposed to More Than 90 EPNdB



Full Power Takeoff; Conventional Flap Approach

Figure 7



Mr. FLORIO. Thank you very much.

I would reinforce the points I made before, which I took from your testimony, regarding consistency in market potential and regulatory intent is most important to engine manufacturers, as you strive to provide the services needed. I observed that changing the rules in midstream is not conducive to consistency of market potential in regulatory intent.

I think we will conclude with the last——

Mr. HARR. Mr. Titcomb of Pratt & Whitney.

STATEMENT OF GORDON A. TITCOMB

Mr. TITCOMB. Mr. Chairman, and members of the Transportation and Commerce Subcommittee, the commercial products division of the Pratt & Whitney Aircraft Group appreciates this opportunity to comment on H.R. 3942, entitled "the Aviation Safety and Noise Reduction Act" as reported by the Committee on Public Works and Transportation. I will confine my comments to title III, section 303 of this bill.

Pratt and Whitney aircraft designs, develops and produces engines for commercial jet transports. Various models of our high-bypass ratio JT9D engine provide power for 747, DC-10, and A300 wide body aircraft. The JT9D has also been selected by airlines for the new 767 and A310 wide body twins. Our JT3D engine powers most of the 707 and DC-8 aircraft and our JT8D engine powers all 727, 737, and DC-9 aircraft. In total, our engines power more than 70 percent of the commercial transport aircraft flying today.

Since the introduction of jet transports, we have had and continue to have aggressive technology programs to reduce the noise produced by our engines.

This effort, coupled with similar programs conducted by the airframe manufacturers, has permitted significant noise reductions for newly certificated aircraft. The application of this technology where practical in the manufacture of previously certificated aircraft also has resulted in the reduction of noise produced by these aircraft. We have supported regulations which reflect noise reductions made possible by the application of this technology to current production aircraft.

However, we are opposed to the concept of legislative or regulatory action which would apply the most stringent noise levels practical for new aircraft/engine combinations to currently certificated aircraft. This action would stop or drastically curtail production of otherwise viable and needed aircraft such as the Boeing 727 and 737 and the McDonnell Douglas DC-9, which are powered by our current JT8D engines. These production aircraft meet stage II noise levels as required by current FAA regulations. The more stringent stage III noise levels were issued only last year to recognize noise reduction technology which could be applied to new type aircraft.

Our reasons for opposing the production cutoff of stage II aircraft were described in our previous testimony before the Aviation Subcommittee of the Committee on Public Works and Transportation on April 24, 1979. This testimony was submitted to the Transportation and Commerce Subcommittee with our letter of June 11, 1979. I will briefly summarize this testimony.

The 727, 737, and DC-9 aircraft powered by current JT8D engines satisfy a vital, continuing airline need in the 100 to 135 passenger size. These aircraft represent a large percentage of today's U.S. airline fleet and sales are projected to continue through the 1980's, although at a declining rate. Most of the stage III aircraft scheduled for production during this time will be too large to meet the capacity and range characteristics needed by many air carriers to serve their route systems. The lack of newly manufactured aircraft that would meet certain airline route requirements now satisfied by current 727, 737, and DC-9 aircraft would undoubtedly have an adverse impact on service to small- and medium-size communities.

The imposition of an early production cutoff of stage II aircraft would create substantial unemployment for manufacturers of the affected aircraft and their suppliers. The accompanying loss of the sale of JT8D engines would cause substantial reduction in employment for Pratt & Whitney aircraft and our suppliers who are located in almost every State in the Nation. A stage II production cutoff affecting aircraft delivered to U.S. airlines would likely be followed by a similar decision by foreign governments, essentially eliminating the market for these U.S. aircraft. The resulting effect on balance of trade must be given serious consideration.

Improvement in the noise characteristics of the 727, 737, and DC-9 aircraft powered by our current JT8D engines is being addressed aggressively and we believe that modified future production configurations can be made to approach stage III noise levels.

A stage II production cutoff would certainly eliminate the incentive to continue these programs.

Pratt & Whitney aircraft believes that the amended section 303 of H.R. 3942 represents an orderly approach to the stage II production cutoff issue. By referring this complex matter to DOT and FAA for a 1-year study with the specific requirements outlined in section 303, Congress should obtain a thorough analysis of the economic, environmental, public service, and industry impacts resulting from such a cutoff.

We believe this analysis will support our position that a premature cutoff of otherwise viable and necessary aircraft does not serve the public need. We further believe this study will show that significant industrial and economic penalties would result which would outweigh any of the questionable benefits achieved by the cutoff.

A production cutoff of stage II aircraft would be expected to have an imperceptible effect on future overall U.S. airport community noise exposure. This is because the projected number of stage II aircraft to be added to the U.S. fleet after the early 1980's will be relatively small compared to the large number of stage II aircraft already in service, and this will be further offset by a considerable fleet expansion expected in the 1980's with newly designed stage III aircraft.

Regulatory action which would prevent airlines from purchasing airplanes with the optimum capacity and range to serve the traveling public along their route systems is expected to result in serious economic penalties. Use of the newest stage III aircraft as replacements on certain route systems for which they are too large would result in increased operating costs due to inefficient passenger load factors. This inefficiency could lead to increased fares or reduced operating frequency, and possible discontinued service to some small- and medium-size communities.

Thank you for the opportunity to testify here today. If you have any questions, I will try to answer them.

Mr. FLORIO. Gentlemen, we have another vote. I think now that we have heard the testimony, we will go vote and come back and conclude with our questions.

[Brief recess.]

Mr. FLORIO. Mr. Lee.

Mr. LEE. Mr. Chairman, I just simply would say thank you to the panel, particularly for the indulgence of the commercials back and forth retrofitting, to go over and vote.

Mr. FLORIO. Mr. Santini?

Mr. SANTINI. I was temporarily interrupted, Mr. Chairman. No; I will defer to you and perhaps follow up with a question or two.

Mr. FLORIO. Thank you very much.

I have several general questions and specific questions.

One of the things a few of the witnesses made reference to was their legitimate concern over the economic well-being of their customers, the airline industry, the economic health, their ability to not only comply with the existing regulations but your overall concern about the health of the industry. I am wondering if you have the same degree of concern about those portions of the airline industry or those companies within the industry who have already

complied with the regulations and that will be, I think, at a competitive disadvantage if the rules are changed to provide that those noncomplying elements of the industry, in a sense, will have an advantage by virtue of not having complied.

Mr. HARR. There is only one way to answer that question, Mr. Chairman. We are deeply concerned about all our customers.

Mr. FLORIO. Does your concern manifest itself in support of the equitable solution of having everyone adhere to the previously published deadlines and requirements, such that that disadvantage would not accrue to those conforming airlines?

I suspect the answer is no, since you are already on record as stating that you support some of the provisions of the public works bill.

Mr. HARR. We can really get in between our customers on that one.

Mr. FLORIO. I suppose I can appreciate that. The other concern I have is, that if some of these changes are not made, and we have had witnesses in previous hearings from communities and States who have stated that they have been able to defer local action based upon the promise that there would be improvements in noise levels by virtue of the carriers having quieter aircraft, that there will be a renewed emphasis at the local level to become involved in curfews which will be disruptive of the overall transportation patterns. This would certainly have an adverse impact upon the economic health of the airlines, perhaps to the same extent or maybe even greater extent than would the capital expenditures required to comply with the deadlines.

Is this of any concern?

Mr. HARR. I think it is certainly possible that will happen, an understandable eventuality.

I think you have stated both the question and the answer, Mr. Chairman. I think it is going to have to be evaluated against the other penalties that would be paid if an economically unbearable burden, let's say, were put on a local airline in terms of equipment changes. I think it is impossible to generalize.

Mr. FLORIO. I wonder if the representative of Douglas would mind answering this question: If, as FAA indicated, it would give automatic waivers of the 1983 deadline for two- or three-engine aircraft to 1985, if the plane is to be replaced with the stage III aircraft engine such as the DC-9-80, would Douglas be able to manufacture enough DC-9-80's to meet a substantial portion of the created market?

Is that something that the Douglas people feel they would be in a position to respond to?

Mr. McPIKE. Yes, Mr. Chairman, the production rate currently planned for the DC Super 80 is about 60 aircraft per year. That would mean in a 3-year period 180 aircraft. So in no way would we produce enough aircraft during that time period to replace all of the aircraft.

Mr. FLORIO. But what I am suggesting is, if an understanding, or however it has to be firmed up could be arrived at whereby, in accordance with your production schedules, commensurate waivers would be issued, that if in fact the assurance could be provided that so many airplanes could be into the fleet, that a waiver, per

airplane, could be granted so as not to require retrofitting when we have the assurance that the plane would be able to be made available.

Mr. McPIKE. Yes, sir, we would certainly support that concept, being one which provides for the truly meaningful reduction to stage III, even though it might take a little longer as opposed to requiring the stage II requirement by 1983.

Mr. FLORIO. On the question of retrofitting, much has been made out of the fuel inefficiency of retrofitting and yet one of the individuals testified that we are really talking about 1 million gallons of oil per year, gasoline per year, being involved.

Now the numbers we have show that the 11 major carriers use a total of 7.5 billion gallons of oil. So that the loss of 1 million, if that figure is correct, is really not a very substantial portion of the total fuel consumption. I was wondering if that loss by virtue of retrofitting takes into account the new landing and takeoff procedures which are being looked into and are being implemented, which allegedly entail savings, even with retrofitted—fuel savings even with retrofitted airplanes?

Two questions: one, if the 1-million-gallon loss figure is put forth, does it take into account the new landing and takeoff procedure? And if it does or does not, what would be anyone's evaluation as to the real magnitude of 1 million with a total of 7.5 billion being the whole spectrum?

Mr. HARR. I heard the figure too, I do not remember where it came from. I would like to have someone address the question in total; namely, what is the penalty for retrofit?

Mr. McPIKE. Our testimony did include that for the fleet of non-Part 36 DC-9's registered in the United States, the application of the SAM retrofit kit would in fact cost something over a million gallons per year, fuel increase.

It also pointed out that that was only a small part of 1 percent of the total efficiency of the aircraft. So percentage-wise it is quite a small value.

Mr. FLORIO. Therefore, it seems to me, that of all the concerns and all the considerations which go into the decision to retrofit, fuel efficiency or inefficiency should not be a very large consideration, since we are not talking about anything substantial. Is that a fair assumption?

Mr. HARR. Anybody want to quarrel with that?

[No response.]

Mr. FLORIO. Very well.

One other question I had for the GE representative.

Boeing has stated that re-engining is generally not a practical solution as compared to developing new engines. Are you making this investment only for new design aircraft or do you think re-engining is feasible?

Mr. RODENBAUGH. Obviously we think the re-engining is feasible. The CFM 56 effort we have gone through with SNECMA over the last 8 years has been directed to a marketplace that has only recently actually happened. So there has been a long period of time in which there was a fair amount of faith in the marketplace applied by the two organizations developing the engine.

Mr. FLORIO. I heard one of the witnesses state that for the last 10 years the technology has been available and we are only up to 10 percent, if I recall, of the utilization of this technology.

Mr. RODENBAUGH. I think that is probably fairly close to right, because you work on developing for 10 years and then you introduce it into the fleet at the rate at which the fleet can absorb the new technology.

Implicit in that statement is that the airplanes we were flying at the beginning of the time the introduction occurred had a viable economic life left that was of some significance. So you do not just abruptly stop with one technology and start with another one. It is a very slow diffusion process, based primarily on the economic ability of our customers, both the airframe manufacturer to produce the airplane and the airlines to purchase the end piece of equipment. So it takes us a fairly long period of time for a new piece of technology that you know you can do and that you have committed to development to find its way into the fleet because the production capacity of both the airframe manufacturers and the aircraft engine manufacturers and the absorption capability of the airlines is reasonably small. You have to take a period of time.

Mr. FLORIO. So the market problems are really not technical problems, the market problems are not design problems; the information I received from everyone here today is that the industry has the capacity to comply, it is a question as to whether or not the airlines have the financial inclination or the financial ability to comply.

Mr. HARR. You are talking about very expensive units and in fairly large quantities adding up to a tremendous capital investment required by the customer.

Mr. FLORIO. One of the comments that the FAA representatives made when they testified was that the phasing-in was done a long time ago with the advice and concurrence of the airline industry. In fact, they testified that the whole program was something which was not done in a vacuum, but with all of the interested parties.

I am just wondering if the airline industry had input into the process. Was the change such that the airline industry now feels that it cannot economically comply, particularly in light of the fact that at this particular time the airline industry was not economically in very good shape and that since that time the airline industry's economic health has improved, it seems to me, rather substantially?

Mr. HARR. There was a great caveat at the time, Mr. Chairman. I went through this whole birth. The airline industry was not in very good financial shape. But the caveat that the airlines had, and we supported them on in terms of phase-in schedule of this kind, was that there was a formula for the national financial assistance that would enable the airlines to receive the financing that would be necessary to comply in any one of the three ways with the scheduled requirements for noise reduction. When that was abandoned, whether it was due or not to the fact that the airlines briefly last year had good earnings after 10 years of bad earnings, that changed the ball game.

Mr. FLORIO. Just in terms of getting an appreciation of the magnitude of the cost that we are discussing, we have had testi-

money from the airline industry that the total cost of retrofitting trunk carriers is only \$200 million and that one year of advertising exceeds \$300 million. So we are not talking about a great amount of money when compared to other expenditures.

Mr. HARR. Not for retrofitting you are not, that is right, not just for retrofitting. You are not getting much either.

Mr. FLORIO. The point is, you are not being penalized, we have already established that you are not being penalized very much in terms of the fuel. The retrofitting is not costing that much. What you are saying is that the noise reduction is not that substantial.

Mr. HARR. You heard——

Mr. FLORIO. We have had testimony to the contrary, particularly from those areas where retrofitting has already taken place. In Boston and Minneapolis, where there does clearly seem to be a perceived improvement in the situation.

I suspect we will have testimony from Delta Airlines today that will probably be to the contrary as well.

Mr. BLUMENTHAL. When these schedules were originally discussed, it was in a period when the airlines were at a low ebb. There was almost universal discussion of some form of funding of the airlines for the retrofit. That, year-by-year, was delayed but still the airlines, I think, had a very good and rightful reason to think that some form of funding would be made available.

As the time passed, those original schedules then began to be a little bit questionable, in waiting to make their decision as to whether they retrofit or bought new airplanes depended upon the funding. When, during the last year, their financial situation began to change and people then began to talk about funding not being required, I believe that they lost sight of the fact that time had moved on and the ability to do the retrofits or buy new airplanes had kind of used up the time period.

Mr. FLORIO. Used up in what sense? The airlines have been aware of the time frame.

Mr. BLUMENTHAL. The airlines were aware of a rule but, at the same time, led to believe there would be funding.

Mr. FLORIO. I see.

Mr. BLUMENTHAL. They could not rightfully make a decision on which path to follow as long as the funding was a possibility because in some cases a decision would be to make a simple retrofit which did not accomplish much, in contrast to making an entire replacement, which did cost quite a bit. Now the time has gone along. The end dates, however, have remained fixed. So it is becoming very much of a question as to whether industry has the capability to perform against the original dates, regardless of the airlines financial stability at this particular moment.

Mr. FLORIO. I think that you are all saying that the airlines, with some minimum degree of good faith, had the intention of having these requirements complied with but only if the Government was going to pick up a good portion of the tab. Now that this situation seems to have changed rather substantially, notwithstanding the improvement in the economic health of the airlines, they are not as enthused about complying with the regulations.

Mr. Lee?

Mr. Santini?

Mr. SANTINI. I would like to explore some of the thoughts developed in the testimony and some of the thoughts developed in the course of the exchange of questions and answers with Chairman Florio.

First of all, about the analytical basis for the conclusions that the lack of newly manufactured aircraft that would meet certain airline route requirements now satisfied by current 727, 737, and DC-9 aircraft would undoubtedly have an adverse impact on service to small and medium-sized communities.

Given the considerable dimensions of my congressional district, and given the reliance of our rural communities on some contact with commercial airlines, I would appreciate any elaboration that you might offer in regard to adverse impact on the small to medium sized communities.

Mr. TITCOMB. I think I can start to comment and I would like to pass it to both the Boeing and Douglas companies. The 727, 737, and DC-9 satisfy a market segment from a little less than 100 passengers up to 135 passengers, and these aircraft have been specifically good for so-called bottom of the fleet aircraft with the trunk airlines, that is, the smallest aircraft they operate. They have also started now to be suitable for city pairs that the smaller airlines operate such as the local service airlines.

The aircraft, in order to be viable, should be close to full when it is flown or should at least be over its break-even load factor.

City pairs, therefore, must support both frequency and load factor. The meaning of this, if we force the airlines to buy stage III aircraft in the volume required—and that, of course, recognizes the fact that both Douglas and we have an interest in the DC-9 Super 80—if we force the airlines to buy stage III aircraft, there will not be enough to satisfy the route system. I think Mr. McPike testified to that a little bit earlier. So we will then force them to buy either uneconomic airplanes or planes that are not economic for their routes, or not to buy at all, and, therefore, curtail service.

Mr. FLORIO. Or to retrofit so as to be in compliance?

Mr. TITCOMB. This was addressed, if you will remember, to the early cutoff of stage II type aircraft, not to retrofit.

Mr. FLORIO. If I understand your implication, you are saying that the expenditure of some of these amounts will result in some marketing decisions or some servicing decisions that may have an adverse impact upon local communities?

Mr. TITCOMB. Let's take an airline that does not have these aircraft at the present moment in its fleet and must purchase these aircraft. Those are the aircraft that we are interested in because we sell new engines with those aircraft. If those aircraft are not sold, because of the stage II cutoff, what will the airline that needs those aircraft use in their place?

Mr. FLORIO. I think the main concern is that if waivers are not provided, people are going to start making decisions on the economy of providing those planes.

Mr. TITCOMB. Mr. Chairman, you are addressing waivers. My testimony addressed the stage II, production cutoff.

Mr. FLORIO. Which has not been done as yet?

Mr. TITCOMB. Which has not been done and hopefully will not be done. But you are trying to apply a waiver argument to testimony that was not made in the waiver area.

Mr. FLORIO. I understand the gentleman from Nevada's concern about the servicing of the small communities. It is my understanding that part of the motivation for this legislative initiative was to attempt to deal with the problem, the perceived problems by some, that deregulation will provide for the absence of service in small communities, and that the combination of deregulation and compliance with the noise requirements will accelerate the desire to pull out of some of these smaller communities.

What I am trying to determine is whether or not that is a realistic concern?

Mr. TITCOMB. Well, I think it is a very realistic concern that if there are not airplanes that service collectively the smaller city pairs, then the airlines will have to consider either an adjustment in their schedules to provide reduced services to those city pairs or some type of operation that makes it economical.

Mr. FLORIO. If you will permit me to shift off to the waiver provisions on the retrofit, I have a very difficult time appreciating how a \$200 million expense across the entire fleet for retrofitting is going to be of sufficient magnitude that people are going to start making servicing decisions upon that amount.

Mr. TITCOMB. Well, I am a member of a large corporation and I would not consider the expenditure of \$200 million on any nonproductive cause, absolutely would not consider it.

Mr. FLORIO. Thank you.

Mr. BLUMENTHAL. Might I say something about the \$200 million? I have heard it mentioned a couple of times. I am not sure of the source of it, but let me give you a couple of facts that might change that number slightly.

Mr. FLORIO. Air Transport Association is the source, by the way.

Mr. BLUMENTHAL. I am aware, I have read it in the ATA testimony, but with the passing of time I think these numbers become changed.

When these laws were first discussed and the retrofit was first brought upon us, there were certain of the ATA members that had upwards of 100 707's in their fleet.

It was going to cost about \$2 million a copy to modify each of those airplanes. Since that time, the price has gone up considerably because of inflation. But single airlines would have been faced with \$200 million costs to retrofit their 707's alone.

The decision by most of the airlines has been to eliminate the 707 because of its age, and buy other airplanes, so the picture has changed with the passing of time.

Mr. SANTINI. Have the numbers changed?

Mr. BLUMENTHAL. Those numbers would increase if they were to try to make the decision to retrofit the 707 currently. Some of the airlines with the large 707 fleets I think still have a very difficult time ahead of them either getting rid of that fleet or deciding what to do with them.

Mr. SANTINI. If the chairman would permit. Do we know what those numbers are today? Has there been any undated analysis of the cost question?

Mr. BLUMENTHAL. In the appendix, in the supplementary material that we submitted, there are dollar values for the 707, as there are for the other retrofit packages. It requires, in order to make the total assessment, additional information beyond that which we have submitted. What we submitted was the cost of the retrofit package. There is in addition to that, the cost of the installation, which can be substantial, the cost of spares, which in most cases is about 25 percent, the cost in some cases of new training procedures and some increase in maintenance costs.

So the number that we submitted in the chart, in our supplementary package, is a bare bones number in 1979 dollars, not in the year of delivery dollars.

Mr. SANTINI. What is that number?

Mr. BLUMENTHAL. On the 707, \$3 million per ship set in 1979 dollars, not including spares and installation.

Mr. SANTINI. You are saying \$3 million for each 707?

Mr. BLUMENTHAL. Yes, sir.

Mr. SANTINI. That would be times whatever number 707's—

Mr. BLUMENTHAL. Yes, sir.

Mr. SANTINI [continuing]. Are going to continue to be used. Plus installed spares, new training, and costs?

Mr. BLUMENTHAL. Yes sir, and at the time these dates were first discussed some of the airlines had about 100 707's in their fleet.

Mr. SANTINI. A sliding scale consideration, in view of the fact that, as you mentioned, there are several companies that have made decisions to eliminate the 707 by 1985. I assume the number of 707's in service will continue to decline, would it seem probable?

Mr. BLUMENTHAL. That is correct.

Mr. SANTINI. I would appreciate some closer handle on that number. I don't know if it is within your disposition to be able to provide it.

Mr. BLUMENTHAL. There was recently published, I think in the Federal Register, a statement by the FAA as to the number of airplanes, the fleet makeup of the various airlines, and I believe the FAA is in the position of obtaining an update of that information along with the airlines' plans.

The point I am trying to make here is that at the time some of these decisions, which now are being questioned, were made by the airlines, the picture was very, very much different, and the airlines were not talking about \$200 million. It was anything but that.

Mr. HARR. We will certainly try to get you that information.

[Mr. Harr subsequently furnished the Federal Register notice of March 29, 1979, re Turbojet subsonic airplanes, fleet inventory and noise rules compliance. See page 226, this hearing, where the notice has been already printed.]

Mr. SANTINI. Thank you.

Mr. LEE. On this very significant point, after you have ascertained whatever that figure may be, \$200 million plus, do I understand correctly again, reiterating the very significant points that you reduce the whine somewhat, that you don't impact the roar of

the exhaust, and you increase your fuel inefficiency, for that kind of dollar investment. Is that a safe summary?

Mr. McPIKE. We can virtually eliminate the whine of it, come close to eliminating it, but we do nothing about the roar, yes.

Mr. FLORIO. Is it not the case, because we have had at the combination of retrofitting plus the new landing and takeoff procedures to provide for increased fuel efficiency and substantial reductions in the whine and the overall noise impact. As a matter of fact, I think we are going to have testimony to that effect from some of the carriers who are already retrofitted. Is that your understanding as well?

Mr. McPIKE. Our testimony, Mr. Chairman, was on the DC-9 and the benefit after cutback on takeoff varies between zero and 2 EPNdB, so regardless of the degree of cutback, that is made on the DC-9, the reductions due to the SAM retrofit are in our opinion, insignificant.

Mr. FLORIO. Thank you.

Mr. SANTINI. That is essentially part of the response you were offering when you stated, that with retrofitting "not getting that much," is that what you meant by that?

Mr. HARR. You have got the old airplane, with whatever limited life it has left in it, you have the old engine, with whatever limited life it has in it, and it is a long way from what you are getting if you get stage III into your fleet. You have still got an old airplane with reduced amounts of economic viability and there is no mystery, people are arguing about degree, but the basic facts are the same, it is a case of what is the best mix to answer your problem. An awful lot of retrofitting is going on.

Mr. SANTINI. Are you getting that much in terms of reduction of noise level?

Mr. HARR. Well, not on the——

Mr. SANTINI. Two and three engine?

Mr. HARR. No, two and three engine, no.

Mr. SANTINI. Have you conducted any tests or do you have any measurement of the decibel noise reduction?

Mr. HARR. They are rather elaborate, some of the testimony that was given before you came in.

Mr. SANTINI. I am sorry.

Mr. HARR. As I say, I am not the technical man here, but any of you want to speak to that?

Mr. BLUMENTHAL. Those numbers are again in this supplementary information for the Boeing airplanes, the before treatment and after treatment, for various levels.

It is difficult to generalize. The JT3D airplanes enjoyed a very large reduction in noise with quiet treatment but was very expensive and because the airplanes tended to be old, the decision was not to retrofit. The key situation has been made to reengine in the case of certain of the DC-8's. That decision has not been made as yet on the 707. It is being very actively reviewed and we are still

pursuing that with some very expensive design and flight tests in cooperation with CFMI.

Mr. FLORIO. How would you think that decision whether or not to redesign the 707 engine be impacted by the provision to authorize waivers?

Mr. BLUMENTHAL. I suspect, let's see, it will take us 3 years from the date of decision to proceed before we could deliver the first airplane. So it would be 1983, if we made the decision now, essentially the first of 1983 before we could deliver the first one, which would mean there might be some waivers required, probably not because the airlines have gotten rid of certain of the airplanes.

By 1985 probably we could supply the necessary engine and the nacelles. I say probably, because to some extent it is dependent upon the number that would be ordered and also on the decision by the foreign airlines on what they do, both of which are unknowns.

Mr. FLORIO. Thank you.

Mr. SANTINI. I have difficulty with my 7-year-old son's puzzles, needless to say I am completely lost with your summary sheet on the back, but can you help me construct or interpret noise level, interpretations on this summary sheet and translate that into decibel reduction? I appreciate your point about difficulty to generalize, but for those of us in this life in the periphery of ignorance, generalizations are the only salvation.

Mr. BLUMENTHAL. Let me start out on that sheet, the second column, under the 707, on that page—

Mr. SANTINI. Yes.

Mr. BLUMENTHAL [continuing]. For takeoff with cutback, the untreated noise level is 113 EPNB. If we put the quiet cell treatment on that airplane, that would reduce the noise level by roughly 11 dB. The difference between those two numbers, 113 and 102.

On the approach condition, with partial flaps, the noise level would have gone from 116.8 down to 103.9 which is roughly a reduction of 13.

On the sideline noise level, it would be a reduction of less than 3. Going from 102 to 99½. That is the same kind of mathematics involved in the others.

For instance, for the 727-200, with the quiet nacelle, takeoff with cutback goes from 101 to 99. That is a reduction of 2.

At the approach condition, with the minimum flaps, it is a reduction of about 8. And at the sideline measuring point there is no reduction.

Mr. SANTINI. Now, those numbers in turn have to be translated, I suppose, in some meaningful determination of impact on the auditory sense and potential hearing damage, and that kind of analysis. I appreciate the posture of that. But you don't want us to engage in an exercise in legislative futility. I am concerned in the retrofitting question, if we are to know whether we are accomplishing anything meaningful in terms of noise reduction or not; I suppose I will have to leave that question until all of the testimony is assembled and put down.

Mr. BLUMENTHAL. On the JT3D-powered airplanes, that kind of change that we discussed here would have been very noticeable. On the JT8D-powered airplanes the differences that we were talking about would be noticeable for the approach condition. They would

not be noticeable at takeoff or sideline measuring points. As a matter of fact, I don't believe that even the trained ear would be able to tell.

Mr. SANTINI. Discern any difference?

Mr. BLUMENTHAL. Which airplane had the treatment as it flew on takeoff and approach.

Mr. SANTINI. Those 2- and 3-engine planes you are talking about?

Mr. BLUMENTHAL. Yes.

Excuse me, on takeoff and sideline. On the approach condition, I can tell the difference. I think when you get an old ear telling the difference, that is probably meaningful.

Mr. SANTINI. I am struck also, as you discussed with the chairman and among yourselves, with another rather obvious problem you all are dealing with—it seems to me that the airlines are as well—that is indecisiveness. Somebody—I believe it was you—used the expression “not knowing which path to follow.”

My gosh, I do not know how you have any sense of footpath, not necessarily you but the airline board of directors, of trying to figure out where they are going and what they are doing. It is a kind of best guesstimate situation with the sword of congressional action hanging over their heads, or the key to the Federal Treasury being laid on the corporate table, depending on interpretations.

But it seems to me at the very least we ought to try to accomplish in this Congress getting some definitive resolution once and for all about which path we are following for purposes of this legislation, and I am hopeful it will be a constructive and righteous path rather than one with pitfalls and detours.

I am just getting introduced to this issue; my senior Senator from the State of Nevada has long been concerned and involved with this issue. I am going to follow with interest the facts as they evolve in this subcommittee.

Thank you, gentlemen, very much.

Mr. FLORIO. Gentlemen, thank you very much.

Mr. HARR. Mr. Chairman, thank you.

Let me assure you that this team is available any time you need any further input, if we are not too confusing.

Mr. FLORIO. Thank you very much.

Our next and final panel is made up of airline carriers. We are very appreciative of their cooperation in coming today. We have Mr. Paul Johnstone, senior vice president, operations services, Eastern Airlines; Benjamin Griggs, vice president for Northwest Airlines, and James Callison, senior vice president, general counsel, of Delta Airlines.

Gentlemen, we appreciate your participation and your willingness to wait through the long morning session. We would appreciate your proceeding. We have copies of your statements. Your entire statements will be entered into the record and we would appreciate your proceeding in a summary fashion as you see fit. The first witness will be Mr. Johnstone of Eastern Airlines.

STATEMENTS OF PAUL M. JOHNSTONE, SENIOR VICE PRESIDENT, OPERATIONS SERVICES, EASTERN AIRLINES, INC.; BENJAMIN G. GRIGGS, JR., VICE PRESIDENT, NORTH WEST AIRLINES INC., AND JAMES W. CALLISON, SENIOR VICE PRESIDENT AND GENERAL COUNSEL, DELTA AIRLINES, INC., ACCOMPANIED BY GERALD M. MAYO, COUNSEL, NOISE ABATEMENT ISSUES

Mr. JOHNSTONE. Thank you, Mr. Chairman.

My name is Paul M. Johnstone. My position is senior vice president, operations services for Eastern Airlines. That entails engineering, maintenance, purchasing. We appreciate the opportunity to appear before this subcommittee on the subject of noise legislation.

Our goal is to introduce new technology aircraft into our fleet as rapidly as possible. They are not only significantly quieter but they burn up to 30 percent less fuel per seat mile and are much more productive and economic machines.

If you will permit me a little advertising, Eastern was the first major airline to retire all of its noisy 4-engined Boeing and Douglas jets back in 1970-73. We have been the industry leader in introducing the quietest available jet airliners into service; for example, the Lockheed 1011, the Airbus Industry's A-300, and to be followed by the 757 from the Boeing Co. in the 1983 period.

We believe, however, this plan is now being handicapped by the requirement to retrofit the older DC-9, 727, two- and three-engine fleets equipped by the JT8D engine. Such action will divert funds from the replacement program and prolong even longer the life of the earlier noisy, increasingly uneconomic types still remaining.

Part of my written testimony, you will see from table I, we have 149 DC-9's and B-727's to be retrofitted, involving a total of 23 tons of deadweight to be added to a total of 444 engines. The cost of modification for our fleet in 1979 dollars will be over \$24 million; carrying around that 23 tons of deadweight will cost us we estimate 850,000 gallons per year increased fuel burn due to the deadweight.

We have looked at the data submitted by the manufacturers with FAA. We see no reduction in takeoff and sideline noise at all. Yet these two cases to us represent the preponderance of community concern. Nor will it, we submit, reduce noise in the landing approach case enough for the human ear to reliably detect.

Unfortunately, we feel the public is being led to believe that the noise from two- and three-engine retrofitted jets will drop markedly after January 1, 1983, when the types are all due to meet FAR-36 stage 2. The whole notion of sound-absorbing material retrofitting of such twin and trijet aircraft as a requisite for continued operation is based upon the false hope that perceivable noise abatement will result. Political and administrative agency advocates and some airport proprietors have under this misconception regrettably raised the expectations of airport neighbors. That relief will not occur is obvious from listening to current takeoffs and landings of 727-200 and DC-9-50 aircraft which were delivered since 1972 with sound-absorbing materials incorporated in the nacelles. As a matter of fact, the stretched models still being delivered today make

more noise at takeoff and sideline than the original unstretched airplanes.

I think you have, just as a matter of record, the Dulles noise experiments so I will not dwell on those. Let's go on.

Two years ago Eastern loaned a DC-9-31 to Douglas Aircraft Co. for a full series of noise tests. A report on these tests has been submitted with this testimony. The results show that the aircraft is within FAR 36 limits at takeoff and sideline and is only 7/10 of an EPNdB over at landing. That fraction of a decibel, which is probably well within the measurement tolerances, is now going to cost Eastern alone \$13.5 million and 350,000 gallons of fuel per year, aside from the cost incurred by the 300-odd non-FAR 36 DC-9's in U.S. service.

Incidentally, because of one decibel difference between the FAA and the ICAO international world standard, the untreated DC-9-31 can in fact be shown to comply with ICAO Annex 16 standards. Foreign governments, for example Australia, are therefore not requiring noise retrofit for the DC-9-31. High bypass ratio engines, we have heard talk about that this morning, are well recognized as the most effective way to substantially reduce noise with a bonus of fuel conservation. The DC-8-60 re-engining program is a latest example of this fact.

The high bypass ratio engines achieve the desired result because their power exhaust jet velocities have less of a shearing effect on the surrounding air. The possibility of re-engining existing DC-9's and 727's has been studied and so far shown to be not feasible. The high bypass ratio engines are much heavier and, because of the tail-mounted engine layout, the balance of the aircraft would be upset too much.

Eastern plans to start replacing its existing DC-9 and B-727 fleets when the B-757 becomes available in early 1983. In fact, this process has already commenced, with 25 DC-9 and B-727 non-FAR 36 aircraft being retired between 1977 and 1979. The B-757 is a twin-engined high bypass ratio aircraft which will be quieter and cheaper to operate than any jet airliner in service today. It will carry 174 passengers and, although it is capable of 2,000-mile trips, its average stage length will be much shorter. Consequently, its frequency of takeoff and landing will be relatively high, conferring maximum benefit in replacing noisier aircraft. With its compact dimensions and good field length performance, this advanced technology aircraft will be capable of serving all Eastern airports.

If the sum in excess of \$24 million is spent by Eastern on retrofit for no productive benefit, it will add considerably to the already disturbing trends of increasing operating costs while at the same time yields are decreasing. It is only by continuous improvements in efficiency that the airline industry has managed to maintain air fares so low in real terms. Retrofit is clearly quite contrary to such efficiency gains.

In conclusion, we believe that progressive introduction of quieter jets is continuing to improve the noise situation and this policy should be speeded up, not slowed down.

We have come a long way from the deafening roar of the first generation straight jet 707 and DC-8's. Encouraging the introduc-

tion and widespread deployment of new advanced technology aircraft is now the highest priority goal.

Thank you, Mr. Chairman.

[Mr. Johnstone's prepared statement and attachment follow:]

STATEMENT OF PAUL M. JOHNSTONE, SENIOR VICE PRESIDENT FOR OPERATIONS SERVICES, EASTERN AIRLINES, INC.

Mr. Chairman: My name is Paul M. Johnstone, my position is Senior Vice President-Operations Services for Eastern Airlines. We appreciate the opportunity to appear before this Subcommittee on the subject of noise legislation.

Our goal is to introduce new technology aircraft into our fleet as rapidly as possible. They are not only significantly quieter but they burn up to 30% less fuel per seat-mile and are much more productive and economic machines.

Eastern was the first major airline to retire all its noisy four-engine Boeing and Douglas jets back in 1970-73. We have been the industry leader in introducing the quietest available jet airliners into service—for example, the L1011 and A300, to be followed by the B-757. However, this plan is now being handicapped by the requirement to retrofit the older DC-9 and B-727 fleets. Such action will divert funds from the replacement program and prolong even longer the life of the earlier noisy, increasingly uneconomic types still remaining.

As summarized in Table I, Eastern has 149 DC-9s and B-727s to be retrofitted, involving a total of 23 tons of deadweight to be added to a total of 444 engines. The cost of modification in 1979 dollars will be over \$24 million, plus 850,000 gallons per year increased fuel burn due to the deadweight. In return, this retrofit will:

1. Not reduce noise in the take-off and sideline cases at all. Yet these two cases represent the preponderance of community concern.

2. Nor will it, we submit, reduce noise in the landing approach case enough for the human ear to reliably detect.

Unfortunately, the public is being led to believe that the noise from two and three engine retrofitted jets will drop markedly after January 1st, 1983 when the types are all due to meet FAR 36 Stage 2. The whole notion of sound absorbing material retrofit of such twin and tri jet aircraft as a requisite for continued operation is based upon the false hope that perceivable noise abatement will result. Political and administrative agency advocates, and some airport proprietors, have under this misconception regrettably raised the expectations of airport neighbors. That relief will not occur is obvious from listening to current take-offs and landings of B-727-200 and DC9-50 aircraft which were delivered since 1972 with sound absorbing materials incorporated in the nacelles. As a matter of fact, the stretched models still being delivered today make more noise at take-off and sideline than the original unstretched models.

Flyover tests at Dulles and experiments by noise specialists have repeatedly demonstrated that the noise difference due to retrofit is barely audible outdoors. An analogy is the difficulty in detecting a difference of a couple of degrees Fahrenheit, more or less, of room or outside temperature.

Indoors—and much of the concern has been about indoor perception—the ability of nacelle retrofit materials to reduce noise is even less than the tiny outdoors effect.

In addition to the special Dulles tests, routine noise monitoring by the FAA at Dulles and National Airport is showing that two and three engine narrow body jets which are certificated to FAR 36 cannot be distinguished in the measurements from the non-FAR 36 ones.

Two years ago, Eastern loaned a DC-9-31 to Douglas Aircraft Company for a full series of noise tests. A report on these tests is submitted with this testimony. The results showed that the aircraft is within FAR 36 limits at take-off and sideline and is only 0.7 EPNdB over at landing. That fraction of a decibel, which is probably well within the measurement tolerances, is now going to cost Eastern alone \$13.5 million and 350,000 gallons of fuel per year, aside from the costs to be incurred by the 300-odd other non-FAR 36 DC-9s in U.S. service.

Incidentally, because of a one decibel difference between the FAA and the ICAO world international noise standards, the untreated DC9-31 can, in fact, be shown to comply with ICAO Annex 16 standards. Foreign governments, e.g. Australia, are therefore not requiring noise retrofit for the DC9-31.

High bypass ratio engines are well recognized as the most effective way to substantially reduce noise, with a bonus of fuel conservation. The DC8-60 re-engineing program is the latest example of this fact. The high bypass ratio engines achieve the desired result because their lower exhaust jet velocities have less of shearing

effect on the surrounding air. The possibility of re-engining existing DC-9s and B-727s has been studied, but shown to be not feasible. The high bypass ratio engines are much heavier and because of the tail-mounted engine layout, the balance of the aircraft would be upset too much.

Eastern plans to start replacing its existing DC-9 and B-727 fleets when the B-757 becomes available in early 1983. In fact, this process has already commenced, with 25 DC-9 and B-727 non-FAR 36 aircraft being retired between 1977 and 1979. The B-757 is a twin-engined high bypass ratio aircraft which will be quieter and cheaper to operate than any jet airliner in service today. It will carry 174 passengers and although it is capable of 2,000 mile trips, its average stage length will be much shorter. Consequently its frequency of take-off and landing will be relatively high, conferring maximum benefit in replacing noisier aircraft. With its compact dimensions and good field length performance, this advanced technology aircraft will be capable of serving all Eastern airports.

If the huge sum, in excess of \$24 million, is spent by Eastern on retrofit, for no productive benefit, it will add considerably to the already disturbing trends of increased operating costs—while at the same time yields are decreasing. It is only by continuous improvements in efficiency that the airline industry has managed to maintain air fares so low in real terms. Retrofit is clearly quite contrary to such efficiency gains.

In conclusion, we believe that progressive introduction of quieter jets is continuing to improve the noise situation and this policy should be speeded up, not slowed down. We have come a long way from the deafening roar of the first generation straight-jet B-707s and DC-8s. Encouraging the introduction and widespread deployment of new advanced technology aircraft is now the highest priority goal.

TABLE I OF I.—EASTERN DC9/B727 NOISE RETROFIT

Aircraft	Number	Cost ¹ in millions	Added weight (tons)
DC9-31	58	\$13.5	10
B727-100	69	11.3	13
B727-200	22		
Total.....	149	24.8	≈ 23

¹ 1979 dollars.

² Increases fuel burn by 850,000 gallons per year, or \$509,000 per year at 60 cents/gallon.

Mr. FLORIO. Thank you very much.

Gentlemen, we have a vote and we will be back in 5 or 10 minutes.

[Brief recess.]

Mr. FLORIO. Mr. Griggs of Northwest Airlines.

STATEMENT OF BENJAMIN G. GRIGGS, JR.

Mr. GRIGGS. Mr. Chairman and members of the committee, my name is Benjamin Griggs, vice president, assistant to the president, of Northwest Airlines, Inc. My responsibilities include the planning and supervision of the flight operations of Northwest Airlines.

You have a copy of my prepared testimony. I will try to summarize in the confines of my feeling, having come 950 miles, I would like to say at least something on the issue because I feel we have an impressive record in Northwest Airlines, having contributed to the reduction in aircraft noise.

We have really done two major things: In fleet planning, Mr. Chairman, of new modern aircraft, we have achieved a fleet which is perhaps second to none in both being modern, efficient, and in producing the least noise. We have also developed and implemented, and our pilots follow very precise noise abatement procedures.

These were done from the days that we first operated jets in 1960 and have been continued and improved upon since then.

I would now like to comment specifically on several provisions of H.R. 3942. In my testimony, on pages 2 and 3 you will find a summary of our fleet status, such as on page 4, to \$1¾ billion worth of airplanes which meet at least stage 2, and the latest ones we are taking this year and next; namely, eight new 747-200-B aircraft, which will meet stage 3 levels.

We have also done and are doing two retrofit programs. The first was on our earliest 747 aircraft on which we spent \$6 million to equip with new nose cowl which is part of the nacelle, which brought them into the stage 2 noise levels, and happily enough, as we have always found in this situation, also reduced the fuel consumption of those aircraft at the same time by some 1-to-1.5 percent. That is a specific type of retrofit that is not applicable to other aircraft because that is a replacement of a nose cowl which had blow-in doors to those which are smooth, so to speak. But that was one retrofit program unlike most others, that brought about a fuel consumption reduction as well as a noise reduction.

Mr. FLORIO. What type of a plane did you say that was?

Mr. GRIGGS. That is on the Boeing 747, the earliest big widebody. The earliest models of that airplane came with what is known as a blow-in door in the nacelle, which was designed originally to bring in more air to the engine under takeoff conditions. It was found to be not necessary later and this retrofit replaced it with a smooth cowl, so to speak. But the noise emanated through the blow-in doors and without them there was less noise to be heard from the aircraft.

We have committed and begun a \$2 million retrofit on our early 727-200 aircraft of which we have 23. We also have 23 of this model with a later engine which meets stage 2. They are now being delivered to us. We have done that because there is a time factor here, there is a noise reduction in this aircraft type that at least on approach is 5.1—this aircraft is 5.1 effective perceived noise decibel over the limit, so to speak, and we have decided that for timing, for economic purposes, we had to begin on this program.

We do, however, still have 19 other 727-100 aircraft for which we have not committed to retrofit but will if that is necessary and the regulations are not changed. We have taken away from our fleet the noisy type aircraft, the 707's, 720-B's, 44 of which have been sold and not been operated by Northwest Airlines for several years.

The 727-200 aircraft, which in effect replaced some of the early 707 and 720-B aircraft in our fleet, showed a noise reduction of 15 perceived noise decibels. That is significant. That is one and one-half times the number which is recognized generally as halving the noise level.

A 747 freighter, which carries almost three times as much as the 707 freighter and is considerably heavier, still produces between 6 and 11 less noise decibels than the 707 freighter, which we replaced. The 747 retrofit, as I pointed out, reduces by 7 perceived noise decibels the noise of that aircraft and that was the one that brought about fuel consumption reduction as well.

The other major accomplishment is in the development and implementation of operating procedures designed to achieve the

greatest possible reduction in noise in those population areas with heaviest concentration around airports. There has been a fortunate situation in that we have found in achieving a noise reduction we have also achieved a potential fuel saving. This has nothing to do with retrofit.

Earlier testimony was confusing. Talking retrofit with operating procedures is an apples and oranges type of situation. The fuel consumption reduction you can achieve in operating procedures is simply the result of the way you fly the airplane. It does not matter whether the airplane is retrofitted or not, you are still going to achieve the fuel consumption reduction by operating procedures which in themselves are designed to reduce noise.

Mr. FLORIO. I think the relevance was that at one point in the previous hearing someone was saying that by virtue of retrofitting, you would lose some degree of fuel efficiency, a minimal amount. It was an airline, as I recall, or representative of the airlines. That particular airline we are making reference to was not involving itself in these new procedures. Suggestion was made that notwithstanding the retrofitting and minimum fuel efficiency lost by enacting or adopting these new procedures, the sum net effect would be a positive one.

Does that make any sense as far as you are concerned?

Mr. GRIGGS. Mr. Chairman, the net effect is a positive one. However, in my testimony, I will bring this out, I try to point out that the noise reduction potential of operating procedures is far greater than the retrofit potential for reducing noise in the two- and three-engine aircraft. That is not necessarily true in other types.

And the measurements taken, which I cited here, by FAA at Washington National Airport and elsewhere doesn't seem to show much difference between retrofitted and nonretrofitted aircraft. The difference is process, it is a procedural difference, some of which cannot be changed because of the weight of the aircraft or weather conditions or wind. But if you do these procedures they will give you a greater reduction in noise to the most people affected than a retrofit.

I should point out one other thing that confuses the issue. The EPNdB values generally cited are at what we call a FAR-36 measuring point, which are 3 miles from brake release on takeoff and 1 mile from touchdown on approach. Those areas in both cases are generally too close in to the airport to give you a meaningful value as to the noise effect on the great population concentration around airports. And as we note in the FAA report, it is farther out than the FAR-36 measuring point that we get the substantial differences in the noise from various types of aircraft under various operating conditions.

So if you are thinking in terms of the effect on the total population you have to go farther than the FAR-36 measuring points, since they are quite close to the airport and in many cases, are on or near the airport property itself. And you can't get high enough to cut back the thrust until you are usually beyond the FAR-36 measuring point. That is when you are going to get the generally greater reduction.

At any rate, our procedures have saved us 8.5 million gallons of fuel a year, which is about $1\frac{1}{2}$ percent of our total consumption, which is close to 600 million gallons a year.

The procedures that I pointed out basically involve as high as possible rate of climb at initial takeoff then immediately trying to get the airplane cleaned up, get the flaps and slats reduced, so that you don't put out as much thrust and create as much noise to propel the aircraft. Then there is thrust reduction which we precalculate down to the minimum level which is safe for that regime of flight, which is between 1,000 and 3,000 feet above the ground.

That procedure is the same on all Northwest Airlines flights with a small exception, Washington National Airport. Because of the FAA regulations the thrust cutback must be made at a fixed distance from the airport. And thus there are some cases when the airplane is heavy that we are not able to get up to the flap retraction speed before we have to make the thrust cutback. When that occurs it means we are going to drag out over an additional 5 or 6 miles with the flaps out, which takes more thrust. But that is something I hope will be corrected.

At every other airport reduction in the flap settings is made at 1,000 feet of altitude and thrust is reduced and reduced substantially. Without flaps, you don't have additional drag, which you must overcome with thrust.

We have been recognized by the NOIS organization, FAA, DOT, and EPA have recognized our procedures and, as a matter of fact, there have been some advisory circulars written by FAA which spell out a recommended procedure which is very close to, if not almost exactly the same as ours.

The FAA has established and operated since October of 1978 a number of fixed noise monitoring points in the approach and departure paths around Washington National and Dulles International airports. At Washington National comparable equipment types are flown by all operators. Concentrating on 727's, which most airlines use today, FAA published results of the monitoring show Northwest 727 flights in most cases are the quietest of all 727 flights. At Rosslyn and Old Towne for example, Northwest's 727 operations were 10 a-weighted decibels quieter than the noisiest of the 727 operations, a factor generally agreed to as meaning about half the noise.

Just as significant is the fact that the duration of the noise in Northwest's flights over these measuring points is approximately one-half the number of seconds as the duration of the noise from the noisiest operations. Half the noise for half the duration is a most impressive record in our opinion and points out the tremendous significance of operating procedures properly developed and consistently carried out by Northwest's pilots.

Northwest Airlines does not believe that retrofit on two- and three-engine aircraft is a practical or economically sound solution to the noise problem. For the industry, cost of this program will be over \$200 million. For Northwest, applied to both 727-200 and 727-100 models, the cost would be \$3.4 million. In most cases, the difference in noise perceived by a person on the ground from an aircraft flyover is nil—that is, many human beings cannot tell the

difference between the noise they perceive from a retrofitted model versus an unretrofitted model of many of these aircraft types.

However, recognizing the political realities in the country in which we live and do business, recognizing the existence of the subpart E amendment to FAR 91 unmodified by rule or legislation at this time, and recognizing the time required to do this job in the most economical fashion, that is, while the engines are undergoing major overhaul, Northwest has begun the program, as mentioned earlier, on our 727-200 aircraft.

The one area in which Northwest has a particular concern is that of inequities or competitive imbalance created by some of the proposals you have heard and some which are contained in the provisions of H.R. 3942 now being considered by you. Either we should have a retrofit program for two- and three-engine jets with the same standards and noise limits applied to all aircraft of a given type, or we should not have a program for these aircraft at all.

An in-between program exempting some aircraft of some operators because of where they sometimes operate is confusing and competitively unfair because those same "some" aircraft and those same "some" aircraft operators fly at the same or other times in direct competition over the very same routes with aircraft and aircraft operators who cannot be exempted.

Now, turning to some of the specific proposals in H.R. 3942, I will highlight a couple of concerns. The rest of it is in my prepared testimony.

I do feel section 303 is what I call a legislative overkill. I think the economic realities, the FAA rules, politics, the demonstration by the aircraft manufacturers, that each new aircraft model manufactured and offered for sale has in fact been more efficient and quieter than its predecessor. We tried to show that in our experience the aircraft models and operating procedures we use have all demonstrated a happy marriage of fuel savings efficiency with noise reduction.

There is not a replacement for aircraft like the 727-200. I think the Federal Aviation Act of 1958, as amended, clearly gives these prerogatives to the Federal Aviation Administration and, from more recent legislation, advice and counsel to FAA from EPA. FAA has, we believe, demonstrated its willingness and its authority in this area and in a positive sense by, as an example, the publication of such rules as FAR 36 itself and the subpart E amendment to FAR 91. EPA, DOT, and FAA have the technical expertise, the requirement to consider economics and the duty to maintain a viable transportation system, all as legislative mandates.

Section 305, which contains waiver provisions for some two- and three-engine aircraft, is to us the most troublesome part of this proposed legislation. In our opinion, this provision is an unworkable administrative nightmare and a violently anticompetitive act in an industry which Congress has recently decreed to be deregulated.

We select and route our aircraft on the basis of public demand for service, weather, and operational considerations, and inspection, maintenance and overhaul requirements. To introduce another element and to attempt to select and route aircraft to meet the provisions of section 305 would be impossible for Northwest

Airlines, and for those for whom it might be possible, it introduces a requirement for recordkeeping, operation and even potential denial of landing permission which should never be introduced. It is, we believe, unworkable.

The anticompetitive aspect of section 305 has been mentioned earlier by us in this presentation. However, it is here important to reiterate that particularly under deregulation this provision will allow side-by-side operations of complying and noncomplying aircraft between the same points and in direct competition on the same routes by operators having all complying aircraft in their fleet against whose some or all of those aircraft have not been made to comply, with the obvious economic advantage to the latter. It would also, we believe, be anticompetitive with respect to the population on the ground, some of whom are forced to accept operations of both complying and noncomplying aircraft and some others who may be forced to accept operations by virtually all non-complying aircraft while their brethren citizens in other locations may be receiving whatever benefits there are to having virtually all the operations in complying aircraft. Again, we must strive for the same standards applicable to each model of the two- and three-engine types, except possibly for operations wholly within the States of Alaska and Hawaii, which is a different circumstance. Otherwise, there will be chaos and competitive imbalance in our industry.

Section 306, which places a moratorium on certain types of FAA rules, regulations or orders, is, we believe, like section 303, an unnecessary and unwarranted intrusion upon the provisions of the Federal Aviation Act. Frankly, I am scared of it because it says that you can't do anything except for something that affects safety, and then you get into a never-never land of what does affect safety and what doesn't. I hate to see tampering with the system that has been built up and has the need for publishing of proposed rulemaking and all the provisions in it for doing things that need to be done. We have our day in court with FAA, notices are given, we have an opportunity to speak before people who understand our language. I think we should try to continue to make that system work rather than trying to impose by legislation some types of moratorium on the rulemaking process which otherwise is supposed to work in all cases.

I think it is hard to define what is safety, and what isn't safety and I think we would like to have the forum before the technical experts rather than have to burden the Congress about this type of decisionmaking.

In title IV, the Secretary of Transportation is required to submit reports to the Congress on the status of collision avoidance systems, and we see this as being a reasonable provision and I don't know if you want comment on this or not. I put it in. I understand you are considering the whole bill, but you will find starting on page 12 my very deep concerns with title V, which was sort of stuffed into this bill as an afterthought, I guess.

Mr. FLORIO. This committee has no jurisdiction over that.

Mr. GRIGGS. I won't go into that. It worries me very much to have that kind of a thing in a congressional bill because it is a very technical subject and it takes an awful lot of time and I think

safety is affected by it. I just believe this isn't the place we should try and write air traffic rules.

Title V, section 501, of H.R. 3942 is of grave and serious concern to Northwest Airlines. This is the section which puts the Congress of the United States in the business of setting up and operating our air traffic control system. We believe that it is proper for the Congress, as it has done, to set up and appoint a Federal agency to control air traffic. We do not believe that the authors of the Federal Aviation Act of 1958 or its predecessors or any amendments thereto up to this time had in mind that the specific rules for the operation of that system could or would be a day-by-day concern of the Congress by legislative decree. Such a system in our opinion would be completely unworkable and could very well derogate safety in the air due to the lack of technical expertise within the Congress and the time constraints on developing and passing legislation. The technical expertise, by law, rests within the DOT and within FAA. Again, by law, including the Administrative Procedures Act, and by practice, the FAA has an adequate and effective rulemaking procedure which allows all parties to be heard and consideration of all aspects of air traffic control by the agency and by the users of the system. Rulemaking concerning the subjects described in section 501 of H.R. 3942 is now in process, and we believe that the legitimate concerns and opinions of everyone involved will be given adequate consideration and that whatever final rules, amendments or determinations are in the last analysis made, they will be in the best interests of safety and efficiency, as determined by those in the best position to make such determinations.

In conclusion, let me express Northwest Airlines' appreciation to the chairman and the members of the committee for inviting us to make this presentation and to express our views on noise reduction and the provisions of H.R. 3942.

[Testimony resumes on p. 358.]

[Mr. Griggs' prepared statement follows:]

PREPARED STATEMENT OF BENJAMIN G. GRIGGS, JR., VICE PRESIDENT, ASSISTANT
TO THE PRESIDENT OF NORTHWEST AIRLINES, INC.

MR. CHAIRMAN AND MEMBERS OF THE COMMITTEE

My name is Benjamin G. Griggs, Jr., Vice President - Assistant to the President of Northwest Airlines, Inc. My responsibilities include the planning and supervision of the flight operations of Northwest Airlines.

Our testimony today will concentrate on the accomplishments of Northwest Airlines in providing meaningful reduction in noise on the ground around airports as a result of the operation of Northwest Airlines' aircraft. We will describe what we as an airline have done and are doing in the area of fleet modernization with new, more efficient and quieter aircraft and what we have done and continue to do with noise abatement operational procedures in the conduct of our flight operations. We will comment on specific provisions of Title III, IV and V of HR 3942, The Aviation Safety and Noise Reduction Act, those portions of the Act which are affected by aircraft types and aircraft operations.

Northwest Airlines has, through purchase of a fleet of the most modern, quietest aircraft, noise-reducing modifications

to that fleet and through leadership in developing and implementing noise abatement operating procedures, produced a record of which we are sincerely proud.

Our modern fleet of aircraft includes substantial numbers of new, quiet, widebody jet aircraft. We now have a fleet of 25 Boeing 747 jets which with spare parts cost \$775 million. Four more of these aircraft will be delivered later this year and in 1980, by which time we will have invested approximately \$1 billion in 747 aircraft. The earlier 17 passenger models of this aircraft were retrofitted by Northwest Airlines in 1977 with \$6 million worth of new nacelles to reduce noise, making an already quiet aircraft even quieter. The first four 747 freighter aircraft were delivered with the new type nacelle meeting "Stage 2" FAR 36 noise levels. The newest 747-200B aircraft, of which we have taken delivery of four this very month in 1979 and will receive three more passenger models and one all-cargo model later this year and in 1980, are and will be even quieter, meeting the "Stage 3" FAR 36 noise levels because of our insistence on such a provision in the contract through which we purchased these aircraft from The Boeing Company.

Northwest Airlines' fleet also includes 22 Douglas DC-10-40 aircraft which with applicable spare parts cost \$500 million. The DC-10-40 is an exceptionally quiet aircraft operating well below the "Stage 2" FAR 36 noise levels which are applicable to it.

Since 1976 up to the present, Northwest Airlines has taken delivery of 23 Boeing 727-200A aircraft powered with JT8D-15 engines equipped with sound absorbent material in their nacelles and meeting, again, the "Stage 2" FAR 36 noise levels. Investment in those aircraft is over \$200 million and will be augmented by four additional aircraft of that model to be delivered next year raising that investment to \$250 million.

An investment of over \$2 million has been committed for materials to retrofit our 23 early 727-200 aircraft. The material for that retrofit has already begun to arrive at our main base in Minneapolis-St. Paul, Minnesota. We have completed the installation on two engines and will produce approximately four each month from now on, that being the number of JT8D-7 engines which move through our major engine overhaul facility. Completion of the 89 affected engines should occur by approximately mid-1981.

The remaining 19 aircraft in our fleet, the 727-100 model, are being reduced by sale, three of which are already committed to be disposed of during the next few months. If there are no changes in the rules, and if there are any of these aircraft to remain in our fleet after January 1, 1983, they, too, would have to be retrofitted. This hardly makes sense inasmuch as these aircraft are already below the "Stage 2" FAR 36 noise levels at the measuring points for take-off and sideline noise, and they exceed the limits only at the approach measuring point and only by 2.3 EPNdB

(effective perceived noise decibels), a difference which is imperceptible to the human ear.

In total, Northwest Airlines' fleet, as described above, represents an investment of over \$1-3/4 billion in new, quiet aircraft and retrofit programs to meet the provisions of FAR 36 and the FAR 91 rule applicable to noise. They are as environmentally compatible as the state of the art today will permit.

Over the past eight years, Northwest Airlines has removed from our fleet and sold 44 of what have been recognized as the noisiest aircraft types in that fleet -- namely, the Boeing 720B and the 707-320B and C types. We have not operated any of those types for several years, and they were sold primarily to foreign operators at distant, overseas points.

Examples of the amount of noise reduction achieved in Northwest's program are as follows: a 727-200A replacing a 707 has a measured reduction of 15 EPNdB. This is one and a half times the number (10 EPNdB) which is generally considered to cut in half the perceived noise level. The Boeing 747 freighter is quieter than the 707 freighter it replaced by 6 EPNdB on take-off and 11 EPNdB on approach to landing. The retrofitted engine nacelles on the early 17 Boeing 747 passenger aircraft bring about a reduction of 7 EPNdB on both take-off and approach as well as reduce the fuel consumption of these aircraft. The newest 747-200B

models now being delivered to Northwest meet the even quieter "Stage 3" FAR 36 noise levels.

The fleet modernization and quieting effort in Northwest Airlines has benefited the passengers and shippers who use this airline. It has made us better neighbors to people who live in communities surrounding the airports we serve. It has created thousands of jobs in the aircraft manufacturing and related industries. It has been made possible only by diligent efforts on our part to achieve the maximum operating efficiencies and cost control.

The other major accomplishment of Northwest Airlines in noise reduction has been our development and implementation of operating procedures designed to achieve the greatest possible reduction in noise for those in the heaviest population concentration around airports. This has been a most fortunate situation for all concerned in that in achieving the maximum noise reduction, we have also achieved a maximum potential fuel saving which, of course, contributes to the efficiency we mentioned as necessary to continue the fleet modernization program as well as being a substantial aid in that vital area of national concern -- the energy shortage. Our noise abatement take-off and landing procedures have saved over eight and one-half million gallons of fuel per year as compared to the usual procedure as used by most other operations in past years. The saving has amounted to about one and a half per cent of Northwest's annual fuel consumption.

Northwest Airlines has been an industry leader since the beginning of jet operations in having and having followed by its pilots the most precise and the most noise control-effective operating procedures. Northwest's procedures are designed to attain the maximum separation between the aircraft and populated areas. There is then a reduction to the last possible amount of thrust (which is the other factor in the offense of noise) by having the aircraft in an aerodynamic configuration as "clean" as possible. This means on take-off maximum climb and flap retraction as early as possible and on landing the least amount of flaps necessary consistent with safety. As mentioned above, these procedures are the most fuel-efficient also, saving millions of gallons of this energy resource annually, as compared to any other procedure used.

Recognition of Northwest Airlines' procedures as being the most effective has been given by the N.O.I.S.E. organization and several airport operators. The FAA, DOT and EPA on a national level are aware of this contribution to noise reduction and fuel economy by Northwest Airlines. Among other state and local authorities, the State of Minnesota Pollution Control Agency has taken extensive noise measurements around the Minneapolis-St. Paul International Airport and has verified the effectiveness of Northwest's operational procedures as compared to all other procedures.

The Federal Aviation Administration has established and operated since October of 1978 a number of fixed noise monitoring points in the approach and departure patterns around Washington National and Dulles International Airports. At Washington National, where comparable equipment types are flown by all operators and concentrating on the Boeing 727 which most airlines use there, the FAA's published results of this monitoring show Northwest's 727 flights in most cases the quietest of all 727 flights. At Rosslyn and Old Town, for example, Northwest's 727 operations were approximately 10 A-weighted decibels quieter than the noisiest 727 operations, a factor which is generally agreed as meaning about half the noise. Just as significant is the fact that the duration of the noise in Northwest's flights over these measuring points is approximately one-half the number of seconds as the duration of the noise from the noisiest operations. Half the noise for half the duration is a most impressive record in our opinion and points out the tremendous significance of operating procedures properly developed and consistently carried out by Northwest's pilots.

Northwest Airlines does not believe that retrofit on 2- and 3-engine aircraft is a practical or economically sound solution to the noise problem. For the industry, cost of this program will be over \$200 million. For Northwest, applied to both 727-200 and 727-100 models, the cost would be \$3.4 million. In most cases, the difference in noise perceived by a person on the

ground from an aircraft flyover is nil -- i.e., many human beings cannot tell the difference between the noises they perceive from a retrofitted model versus an unretrofitted model of many of these aircraft types. However, recognizing the political realities in the country in which we live and do business, recognizing the existence of the Subpart E amendment to FAR 91 unmodified by rule or legislation at this time, and recognizing the time required to do this job in the most economical fashion, i.e., while the engines are undergoing major overhaul, Northwest has begun the program, as mentioned earlier, on our 727-200 aircraft.

The one area in which Northwest has a particular concern is that of inequities or competitive imbalance created by some of the proposals you have heard and some which are contained in the provisions of HR 3942 now being considered by you. Either we should have a retrofit program for 2- and 3-engine jets with the same standards and noise limits applied to all aircraft of a given type or we should not have a program for these aircraft at all. An "in-between" program exempting some aircraft of some operators because of where they sometimes operate is confusing and competitively unfair because those same "some" aircraft and those same "some" aircraft operators fly at the same or other times in direct competition over the very same routes with aircraft and aircraft operators who cannot be exempted.

Now, turning to some of the specific proposals in HR 3942 which you are now considering, Northwest invites your attention to our concerns as hereinafter described.

In Title III, Section 302, which sets standards and compliances for international operations and foreign operators, appears to us to be appropriate as written.

Section 303, providing for a study of "Stage 2" production cutoffs, congressional review of potential production cutoff regulations and congressional review of potentially more stringent noise standards with a one-house veto provision, appears to us as legislative "over-kill". Economic reality, FAA rules and the politics of the nation in which we and the aircraft manufacturers live have demonstrated that each new aircraft model manufactured and offered for sale has in fact been more efficient and quieter than its predecessors. We have tried to show that in our experience the aircraft models and the operating procedures we use have all demonstrated a happy marriage between fuel-saving efficiency and noise reduction. The Federal Aviation Act of 1958, as amended, clearly gives these prerogatives to the Federal Aviation Administration and, from more recent legislation, advice and counsel to FAA from EPA. The FAA has, we believe, demonstrated its willingness and its authority in this area and in a positive sense by, as an example, the publication of such rules as FAR 36 itself and the Subpart E amendment to FAR 91. EPA, DOT and FAA have the technical

expertise, the requirement to consider economics and the duty to maintain a viable transportation system, all as legislative mandates.

We have no comment with respect to Section 304 because it applies only to 2-engine aircraft operating within the State of Hawaii.

Section 305, which contains waiver provisions for some 2- and 3-engine aircraft, is to us the most troublesome part of this proposed legislation. In our opinion, this provision is:

- 1) an unworkable, administrative nightmare, and
- 2) a violently anti-competitive act in an industry which Congress has recently decreed to be deregulated.

We select and route our aircraft on the basis of public demand for service, weather and operational considerations, and inspection, maintenance and overhaul requirements. To introduce another element and to attempt to select and route aircraft to meet the provisions of Section 305 would be impossible for Northwest Airlines, and for those for whom it might be possible, it introduces a requirement for record-keeping, operation and even potential denial of landing permission which should never be introduced. It is, we believe, unworkable.

The anti-competitive aspect of Section 305 has been mentioned by us earlier in this presentation. However, it is here important to reiterate that particularly under deregulation this provision will allow side-by-side operations of complying and non-complying

aircraft between the same points and in direct competition on the same routes by operators having all complying aircraft in their fleet against those some or all of whose aircraft have not been made to comply, with the obvious economic advantage to the latter. It would also, we believe, be anti-competitive with respect to the population on the ground some of whom are forced to accept operations of both complying and non-complying aircraft and some others who may be forced to accept operations by virtually all non-complying aircraft while their brethren citizens in other locations may be receiving whatever benefits there are to having virtually all the operations in complying aircraft. Again, we must strive for the same standards applicable to each model of the 2- and 3-engine types (except possibly for operations wholly within the States of Alaska and/or Hawaii, which is a different circumstance). Otherwise there will be chaos and competitive imbalance in our industry.

Section 306, which places a moratorium on certain types of FAA rules, regulations or orders, is, we believe, like Section 303, an unnecessary and unwarranted intrusion upon the provisions of the Federal Aviation Act and the demonstrated agency actions in compliance with that Act.

Sections 307 and 308 do not suggest comment by Northwest Airlines.

In Title IV, the Secretary of Transportation is required to submit reports to the Congress on the status of collision avoidance systems, and we see this as being a reasonable provision.

Title V, Section 501, of HR 3942 is of grave and serious concern to Northwest Airlines. This is the section which puts the Congress of the United States in the business of setting up and operating our air traffic control system. We believe that it is proper for the Congress, as it has done, to set up and appoint a federal agency to control air traffic. We do not believe that the authors of the Federal Aviation Act of 1958, or its predecessors or any amendments thereto up to this time, had in mind that the specific rules for the operation of that system could or would be a day-by-day concern of the Congress by legislative decree. Such a system in our opinion would be completely unworkable and could very well derogate safety in the air due to the lack of technical expertise within the Congress and the time constraints on developing and passing legislation. The technical expertise, by law, rests within the DOT and within FAA. Again, by law, including the Administrative Procedures Act, and by practice, the FAA has an adequate and effective rulemaking procedure which allows all parties to be heard and consideration of all aspects of air traffic control by the agency and by the users of the system. Rulemaking concerning the subjects described in Section 501 of HR 3942 is now in process, and we believe that the legitimate concerns and opinions of everyone involved will be given adequate consideration and that whatever final rules, amendments or determinations are in the last analysis

made, they will be in the best interests of safety and efficiency, as determined by those in the best position to make such determinations.

In conclusion, let me express Northwest Airlines' appreciation to the Chairman and the members of the Committee for inviting us to make this presentation and to express our views on noise reduction and the provisions of HR 3942. We will be pleased to answer any questions you may have.

Mr. FLORIO. Thank you very much.

Mr. Callison?

STATEMENT OF JAMES W. CALLISON

Mr. CALLISON. Mr. Chairman, I am James Callison, senior vice president and general counsel of Delta Air Lines. I am accompanied here today on my left by Gerry Mayo, who is Delta's senior attorney, who has worked on aircraft noise problems for many years.

While my written statement which has been submitted is quite firm in its view, I believe, it is also fairly short. Nevertheless, Mr. Chairman, I will try to summarize that today, with the understanding that the whole written statement will go into the record.

Delta's firmness of view stems from Delta's decision to fully comply with the existing FAR part 91 regulations even before the regulatory deadlines. Our most fundamental point in Delta regarding this, and the primary reason for moving forward to comply with that regulation, is the fact that this FAR engine noise reduction rule has been in effect since January of 1977, that FAA officials have made it clear that it is their intention to enforce that rule, that we at Delta believed that we had a duty to comply with the rule, and that long lead times required action by April of this year if we were to comply and, finally, and most importantly, local aviation authorities, airports and local communities themselves have accepted the rule and relied upon the carrier's timely compliance with it.

It is in great part due to the present rule that we have been able to work closely with these local airport authorities and communities to avoid disruptive operational restrictions. Without industry compliance with existing regulations we at Delta believe State and local authorities and the various airport operators will find it necessary, and indeed they so testified before this subcommittee during these hearings, to institute a series of local, uncoordinated operational restrictions on the air transportation system.

Such local restrictions would severely disrupt our existing complex of air transportation to the detriment of the traveling and shipping public, would involve the carriers, we believe, in unending litigation and would result in cost to the industry far in excess of the anticipated expense of compliance with existing FAR part 91.

Delta Air Lines has been engaged in a program since the early 1970's designed to considerable expense to maximize the number of aircraft in Delta's fleet meeting the FAR part 36 engine noise standards, standards which were not mandatory when we began our program.

Our program is described in my written testimony—let me just summarize it a bit here today. The big point, for purposes of this hearing today, is the fact that Delta intends to achieve, as I said earlier, full compliance with the now mandatory rule even before the deadline set forth in that rule. Our significant expenditure and our impressive record since the early seventies in this regard are evidenced by the fact that while in 1972 less than 1 percent of Delta's available seat miles were operated with aircraft meeting FAR part 36, by the end of this year, 1979, that ratio will be better than 80 percent, and as I will explain in a moment, in just a few years we will reach 100 percent compliance.

On April 3 of this year we announced our intentions to retrofit its entire remaining DC-9 fleet, which now consists of 44 aircraft. This retrofit program is scheduled for completion by early 1982, well ahead of what is now the January 1, 1983 regulatory deadline.

As I said, we made this commitment for reasons I have already indicated, because we did not view the concerns of the local authorities as idle threats and because there was an existing rule which the Government said it was going to enforce and with which it was our duty to comply.

Later this year, on April 24, we also announced our plans to re-engine the 13 aircraft in our DC-8-61 fleet and to retire in timely fashion under this regulation, the DC-8-51 smaller DC-8 series aircraft. Not only will this schedule bring our entire DC-8 fleet in compliance with part 91 prior to the regulatory deadline, it will allow these aircraft to meet FAR part 91, stage III criteria, which are those much stricter standards now applicable to new types of manufactured aircraft.

In addition, the DC-8 re-engining will reduce fuel consumption by 15 to 20 percent and augment usable payload by approximately 20 percent. With those modifications, that is, the DC-9 retrofit and DC-8 re-engining, Delta's entire fleet will be in full compliance with FAR part 91.

We have 109 Boeing 727 aircraft which already meet the noise limits, 13 of them we acquired through merger and retrofitted after the merger so they complied. The remainder of them were purchased by us at additional expense to meet stage II requirements when they entered our fleet.

Mr. FLORIO. Do you have any 707's?

Mr. CALLISON. No, we never have, no sir. Delta's L-1011 fleet, which is currently 29 aircraft, although it is going to grow in size, that fleet was also in compliance from the time of purchase and, of course, it was in compliance with not only stage II but with all established noise standards, and therefore, with stage III requirements which are for new types of aircraft. So then, they are the ultimate aircraft flying today.

Since Delta initiated its noise reduction program we have spent nearly \$16 million on our aircraft for engine sound and absorption modification retrofit. In addition, the funds yet to be spent on DC-

8-61 and DC-9 fleet will amount to approximately \$120 million. Under these circumstances, and under our plans, we do not anticipate the need for any waiver or exemption from the existing regulatory deadlines.

Also, under these circumstances, we oppose in general any legislative modification of FAR part 91 which would significantly depart from the present requirements of that regulation and in particular, which would alter the existing requirement of retrofit for two or three engine aircraft.

In this connection, we have recently made clear our very vigorous opposition to Senate bill 413 because it includes a provision which would exempt the great majority and some say all of the two and three engine aircraft from compliance with FAR 91.

With regard to the House bill 3942, our views are spelled out in the written testimony, so I will not go through all of that here orally, but in summary, we think titles I and II are probably premature, in view of the ADAP review which is planned for later this year, but titles IV and V are really extraneous or unrelated to the main subject of the bill which, of course, is noise control, and can best be considered in other connections.

So title III, we view it, of course, from our basic position of opposing any significant departure from existing FAR 91. There are parts of title III of the House bill which indeed would dilute FAR 91, especially that small communities provision in section 305. In contrast to the Senate bill, it may not be as significant a departure but it certainly would detract from the integrity of the FAR program of noise reduction.

Other provisions in title III really don't directly affect FAR 91. So on balance, I think our view is that title III probably would unnecessarily dilute FAR 91, and, therefore, that title is itself unnecessary at this time.

If you agree with those views, then we suggest that the best result of these hearings would be no House bill at all on H.R. 3942's subject at this point in time. This would leave present FAR part 91 intact. That, we submit, is the only correct result.

In conclusion, as we say in the written statement, but I would like to say it orally as well, there are two basic reasons for our opposition to any legislative modification of FAR part 91. First, if provisions such as that contained in the Senate bill were enacted into law it would create a vacuum in the ongoing aircraft noise reduction effort, thus affirmatively encouraging the Nation's airport operators to promulgate unacceptable local operational restrictions on the air transportation system. This could only harm the public. State and local governments and airport operators have placed great reliance upon industry compliance with FAR part 91 which, as I said, has been in effect now for some time. And to date we have been able to work with these people in a spirit of continuing cooperation which is mutually beneficial to both the airport operators and airlines and hence to the public.

Passage of legislation such as that contained in the Senate bill would endanger this cooperative effort and undoubtedly would provoke a series of individual uncoordinated local noise control actions around the country, a situation which would be resolvable only by assertion of Federal preemption.

Second, for carriers which like Delta moved ahead in good faith, at significant expenditure to comply with FAR part 91 in the face of governmental insistence that the regulation would be enforced, it would be patently inequitable to enact an 11th hour change in the game rules, especially to the extent proposed in the Senate bill.

May I offer my appreciation, Mr. Chairman, to you and the members of the subcommittee for your consideration of my oral comments and more extended written comments.

[Testimony resumes on p. 368.]

[Mr. Callison's prepared statement follows:]

PREPARED STATEMENT OF JAMES W. CALLISON, SENIOR VICE PRESIDENT, GENERAL
COUNSEL, DELTA AIR LINES, INC.

Mr. Chairman and Members of the Subcommittee:

My name is James W. Callison. I am Senior Vice President - General Counsel of Delta Air Lines, Inc. I am testifying today on behalf of Delta with respect to the Aviation Safety and Noise Reduction Act. I am accompanied by Gerald M. Mayo, Delta's Senior Attorney, who has worked extensively on aircraft noise matters for many years.

Delta Air Lines has firm views on the issues before the Subcommittee. We assume that it is for this reason that the Subcommittee has, with similar firmness, requested Delta to testify here today.

Our most fundamental point, and Delta's primary reason for moving forward to comply with Federal Aviation Regulation Part 91 requirements for engine noise reduction, is the fact that this rule has been in effect since January of 1977; FAA officials have made clear their intention to enforce the rule, and the authorities, the airports and the local communities have accepted the rule and relied upon the carriers' timely compliance therewith. It is in great part due to the present rule that we have been able to work closely with the local

airport authorities and communities to avoid disruptive operational restrictions. Without industry compliance with the existing regulation, we believe that state and local authorities, and the various airport operators will find it necessary--as they so testified before this Subcommittee, and in other Congressional hearings--to institute a series of local, uncoordinated operational restrictions on the air transportation system. Such local restrictions would severely disrupt our existing complex of air transportation to the detriment of the traveling and shipping public; would involve the carriers in unending litigation; and would result in cost to the industry far in excess of the anticipated expense of compliance with FAR Part 91.

Delta has been engaged in a program since the early 70's designed at considerable expense to maximize the number of aircraft in Delta's fleet meeting the FAR Part 36 engine noise standards--standards not at that time mandatory. Since then, we have developed concrete plans to achieve full compliance with FAR Part 91, a regulation which now makes mandatory the Part 36 noise standards for all large airline jet aircraft. In fact, we intend to achieve full compliance even before the deadline set forth in that regulation.

For many years, Delta has demonstrated through its fleet planning its very real concern for the aircraft noise problem. Source noise reduction has been a basic consideration in Delta's fleet retirement and replacement program, and a major part of our effort to be a good neighbor to the airport community. Delta's significant expenditure and its impressive progress in this regard are evidenced by the fact that while in 1972 less than 1% of our available seat miles were operated with

aircraft meeting FAR Part 36 noise standards, by the end of 1979, that ratio will be better than 80%, and as I will explain in a moment, in a few years we will reach 100% compliance.

On April 3, 1979, Delta announced its intention to retrofit its entire DC-9 fleet consisting of 44 aircraft. This retrofit program is scheduled for completion by early 1982, and hence Delta's DC-9 fleet will fully meet the requirements of FAR Part 91 well ahead of the January 1, 1983, regulatory deadline.

Delta made this commitment because, as I stated before, we are convinced that the numerous and clear statements by state and local authorities and airport operators, setting forth their intentions to impose various operational restrictions on aircraft flying into their airports should the essence of FAR Part 91 be deleted, were not idle threats. We not only believe that the ultimate cost of various and non-uniform local airport restrictions would be more for the carriers than would the cost of compliance, but that it certainly would be more disruptive and damaging to the public.

Furthermore, the Administrator, Mr. Langhorne Bond, made it strikingly clear on many occasions that he intends to enforce FAR Part 91 with reference to the two and three engine aircraft. Delta's senior management concluded that it would be unwise to await the results of uncertain legislative efforts to provide for exemption of certain aircraft from compliance with the regulation. The required lead time to obtain the hardware and accomplish the engine retrofit on the DC-9 by the regulatory deadlines necessitated the April commitments.

On April 24, 1979, Delta also announced its plans for reengining the 13 aircraft of its DC-8-61 fleet and the timely retirement of the DC-8-51 series aircraft. Not only will this schedule bring Delta's DC-8 fleet into full compliance with FAR Part 91 prior to the regulatory deadline, it will allow these aircraft to meet FAR Part 36 Stage Three criteria, which are those much stricter standards required for newly manufactured aircraft. In addition, the DC-8 reengining will reduce fuel consumption by 15 to 20%, and augment the aircraft useable payload by approximately 20%.

With the modification of the DC-9 and DC-8 fleets, Delta's entire fleet of aircraft will be in full compliance with FAR Part 91. Delta's fleet of 109 B-727 aircraft already meet all noise limits, thirteen of such aircraft via retrofit at Delta's expense, with the remainder in full compliance at time of purchase as part of Delta's program of expending the necessary funds to purchase quieter (and more fuel-efficient) aircraft to replace earlier, noisier airplanes. Delta's L-1011 fleet of 29 aircraft were also in compliance at time of purchase. Of interest, Delta's L-1011 aircraft meet all established noise standards and are known as one of the quietest in the industry's fleet.

Since Delta Air Lines initiated its noise reduction program, we have expended over fifteen million dollars on our aircraft for engine sound absorption modifications. The funds yet to be spent on the DC-8-61 and DC-9 fleet will amount to an additional one hundred and twenty million dollars.

Hence, Delta Air Lines has moved aggressively to bring its total fleet of aircraft into full compliance with the FAR Part 36

noise standards as required by FAR Part 91. Delta does not anticipate the need for any waiver or exemption from the existing regulatory deadlines. Notwithstanding ongoing efforts for legislative modification of the present regulatory requirements, Delta has moved ahead with its compliance program.

Under these circumstances, Delta opposes in general any legislative modification of FAR Part 91 which would significantly depart from the present requirements of that regulation and, in particular, which would alter the existing requirement for retrofit of two and three engine aircraft. In this connection, Delta has recently made clear its vigorous opposition to Senate Bill 413 because it includes a provision exempting the great majority of two and three engine aircraft from compliance with FAR Part 91.

With regard to H. R. 3942, we do not object to Titles I and II. However, we believe the funding established therein could be much more appropriately dealt with later this year when the House takes up for consideration the Airport and Airways Improvement Act of 1979, which would modify the ADAP program in various ways.

As to Title III of the Bill, I have stated that our basic position is to oppose any measure which would result in a significant departure from FAR 91 as now written. There are parts of Title III which would dilute FAR Part 91, particularly the small communities provision contained in Section 305 which exempts certain two and three engine aircraft from compliance with FAR Part 91. In contrast to the Senate Bill, this provision, standing alone, may not constitute a significant departure from FAR Part 91, but it certainly would detract from the basic integrity of the FAA's program of noise reduction. Other

provisions of Title III of the House Bill would not directly affect FAR Part 91. On balance, while we do not have a strong objection to Title III of H. R. 3942, we do believe that its provisions are essentially unnecessary. Present FAR Part 91 rules have been in place for several years--and they are accepted, and have been relied upon, by the local communities. They should not be diluted with unnecessary changes.

Titles IV and V of H. R. 3942 appear to us to be unrelated to the major subject of noise control, which is our primary concern here today. If you agree with us that there is really no need for legislative change of present FAR Part 91, then these other provisions of the Bill, and the ADAP-related sections, could best be held for other legislation. We suggest that the best result of these Hearings would be no House Bill on H. R. 3942's subject at this point of time. That would leave present FAR Part 91 intact, and that, we submit, is the only correct result.

In conclusion, there are two basic reasons for our opposition to any legislative modification of FAR Part 91. First, if provisions such as that contained in the Senate Bill were enacted into law, it would create a vacuum in the ongoing noise reduction effort, thus affirmatively encouraging the nation's airport operators to promulgate unacceptable local operational restrictions on the air transportation system. This could only harm the public. State and local governments and airport operators have placed great reliance upon industry compliance with FAR Part 91, and to date we have been able to work with these people in a spirit of continuing cooperation which is mutually beneficial to both the airport operators

and the airlines, and hence, to the public. Passage of a provision such as that contained in the Senate Bill would endanger this cooperative effort and undoubtedly would provoke a series of individually uncoordinated local noise control actions around the country, a situation which would be resolvable only by the assertion of federal preemption.

Second, for those carriers which, like Delta, moved ahead in good faith with significant expenditures to comply with FAR Part 91 in the face of governmental insistence that the regulation be enforced, it would be patently inequitable to enact an eleventh hour change in the game rules, especially to the extent proposed in the Senate Bill.

May I offer my personal appreciation to you and the members of the Subcommittee for your consideration of our comments on the pending legislation.

Mr. FLORIO. Thank you very much, gentlemen.

Mr. Santini?

Mr. SANTINI. I will defer to the Chairman.

Mr. FLORIO. One of the points that has been raised by a number of people has been that the rationale, to save the airlines from the economic burden of retrofitting and the impact that retrofitting costs would have upon the ability of airlines to service small communities, would affect air carriers regarding routing.

I wonder if any of you would care to address that whole question of the impact of action or nonaction upon servicing small communities. I think we have an interesting dichotomy inasmuch as we have airline representatives who have not taken action and some who have. I wonder if we can get some observations from any representatives here.

Mr. CALLISON. If I could respond first for Delta, I would think it would have no particular impact in the case of carriers like Delta one way or the other. We service a mixture of large and small cities, perhaps more than any other trunkline we do that. We operate in and out of large hubs and in and out of small communities and do so on hub and spoke basis throughout the Southeast in particular and elsewhere as well.

A typical DC-9, I should say typical DC-9 on the Delta Air Line system, is apt to take weeks before it ever comes back to the same community that it left on "X" day. It goes all around that system through all kinds of markets, large and small. We are going to have to use aircraft of that size until there is something to replace

them, under whatever Federal rules exist to serve those small communities.

So, I don't think a change of the rules themselves, at this point in time, is really going to make any difference in the way we service our small communities.

Mr. FLORIO. I think the implication is that companies would start to make decisions as to whether or not they were going to continue to service those small communities on the basis of whether or not they were going to retrofit and entail the cost associated with retrofitting. That is, if no waivers were allowed and you had to retrofit, the added costs of retrofitting would play a role in determining whether or not you were going to continue to service a particular small community with a small airplane.

Mr. CALLISON. Not in our case. We have already made that decision. The cost is not that high. We are going to retrofit the DC-9 aircraft and continue to use them with that added cost burden until such time as they are replaced with another more efficient aircraft.

Mr. GRIGGS. Mr. Chairman, on behalf of Northwest, our position on that issue is really the same as Delta's.

I might point out our concern on the issue is that we fly side-by-side with what has been a local service carrier; now under deregulation it might just as well be the same as us. He would, under the provisions of this bill, be able to fly between Rochester and Chicago or Madison and Chicago, which is in our route systems where we compete; he could fly it with a noncompliance aircraft and ours would have to comply.

I do not think he is going to quit serving those routes because of having to retrofit or not. There is too much more in the economics involved to make that decision on what is essentially quite a small expenditure. When you get down to the really small communities you are getting, in a lot of cases, out of the jet aircraft altogether. There are still propellor aircraft serving the really small communities and they are not affected at all by this rule. So I do not see their being this kind of a problem.

Mr. FLORIO. Do you have a comment?

Mr. JOHNSTONE. I would agree with both Delta and Northwest. There are other, I think, far overriding economic decisions relating to the small community that would govern. I cannot see in a system the size of ours, or any of us really, that a few airplanes that do not meet the January 1, 1983 requirement would be the trigger to say OK, I am not going to serve a certain city.

Mr. FLORIO. We appreciate your candor. That is something which is very important because the record is full of comments, not only on the Senate side but on the House side as well, of this being a major or at least a significant consideration of people concerned that deregulation is accelerating a lack of service to small communities and that this is a factor that may be the straw that breaks the camel's back. So, I understand what you are saying.

In line with this same area, I would like your thoughts about the workability, or the nonworkability, of trying to comply with the House version of the waiver provision, that is the 60 percent versus the 40 percent.

It seems to me, as someone made in their comment at least in the written testimony, that we are bringing the Federal Governmental agency back in after we are sending signals out through deregulation that they should not be involved as much as they have in the past. Now we are having the agencies monitor and determine if everybody is in compliance 60 percent of the time servicing small airports. We are reversing the general thrust and bringing the Federal Government back in, in a fairly unacceptable way, to monitoring aircraft activity, to say nothing of the costs I assume that the airlines are going to have to start picking up, to keep records as to where their planes are going, whether they are complying with these regulations.

Mr. CALLISON. The point being made was really Mr. Griggs' point, and I would agree, on the paperwork and the added regulation.

From Delta's standpoint, the thing is so totally unworkable for reasons mentioned in my last answer, because of the nature of our system, the way we route our aircraft around our system for a week or two at a time, it would be totally unworkable. We would not attempt to comply with that particular provision.

We still would go ahead and retrofit. From our standpoint that rule is totally unworkable.

Mr. JOHNSTONE. I agree.

Mr. GRIGGS. I agree, too.

The point is, under deregulation supposedly the smaller airlines were supposed to have the same opportunities as we, the medium-sized and larger airlines. My point was, if they are to have the same opportunities at routes and places that we serve, that they should have imposed on them the same rules of the game with respect to what they operate and how much noise they make.

Mr. FLORIO. I would like to direct a question to Mr. Johnstone.

It has been brought to my attention that the Los Angeles City Council has passed an ordinance requiring all airlines flying through Los Angeles International Airport to be in full compliance with existing FAR 36 regulations by January 1, 1985. I would like to know if your company has given any thought as to how they plan to cope with being shut out of Los Angeles International Airport if they are not in compliance with these regulations.

Mr. JOHNSTONE. I do not think that is going to give us a big problem because we basically serve Los Angeles with 1011's or A-300, both of which meet stage 3.

Mr. FLORIO. Though this particular area may not be a problem, I think the point which has been raised is one that is of serious consideration. If the Government does back off of what is regarded as a commitment, the enactment of local ordinances at the county or municipal level may very well be disruptive of overall traffic patterns.

I assume this is a feeling shared by all three companies.

Mr. JOHNSTONE. Yes.

Mr. CALLISON. That is a very basic point with Delta Airlines, yes, sir. Los Angeles of course is a good case in point, because back before part 36 standards were enacted and back before FAR 91 made some of those standards mandatory, there was an awful lot of activity being generated in LA to impose local operational restric-

tions on the airlines at that airport. That in turn generated a lot of litigation.

A lot of that quieted down as a result of part 36 and part 91, but if the Federal Government now begins to back away again, as is proposed in some of these bills, then yes, you are going to start to get that again and an air transportation system on an interstate basis simply cannot operate with a series of local uncoordinated restrictions. So you are going to hamper the country and the transportation system in that way.

Mr. FLORIO. I was very impressed. I suppose both of these airlines made the point with regard to the competitive inequity of having complied and now being faced with a situation that competitors may not be required to comply with the regulations.

Let's hypothetically assume that the law is passed, the Senate bill or the House Public Works version is enacted into law, and the Congress is concerned about the competitive inequity and, to compensate for that, imposes as part of the law landing fees that would be calculated to reflect the nonconforming noise impact. That is to say that those airlines which would take advantage of the new waiver provision and would not be required by law to comply with the standards, might very well be charged with the responsibility of paying for their noncompliance and, as a result, there would be a financial inducement if not a legal requirement that they move in that direction.

Can I get anyone's observations on that initiative?

Incidentally, this, I understand, is in operation in other countries around the world.

Mr. CALLISON. My initial reaction to it is that would be another example of the Federal Government moving out into a new area of regulation in our business contrary to this whole theory of deregulation. Landing fees today of course are essentially set by local communities for their local airports in negotiation with the airlines.

The Federal Government normally does not set them except at Washington National, places like that. So it would be running directly contrary to the deregulation theme for the same sort of reasons Mr. Griggs pointed out with other provisions that have been proposed.

Mr. GRIGGS. Mr Chairman, I agree with Delta's comments.

I might point out that only in Germany is that being done.

Mr. FLORIO. My understanding was Japan as well.

Mr. GRIGGS. No. Japan imposed a noise charge but it does not differentiate between the noise level and EPND, so to speak; it is just a general charge on everybody's operations that is adding to the landing fee.

In Germany, I do not know whether it is Frankfurt or Hamburg, they do have a slight differentiation. This has been talked about among the airline industry. The airlines have unanimously opposed such a thing. It is getting into a legal morass. We already negotiated landing fees and established as a standard that weight is what it should be based on. When they get into introducing some of these other elements, anticompetitive, unfair, I think we all violently oppose such measures as being beyond—

Mr. FLORIO. Of course, if it was done in a uniform way on a national level, I would think that it would reduce the competitive penalty that the conforming airlines would have if the law is enacted as it is currently being proposed. That is to say, there would be no increased landing fee penalty on those conforming airlines, whereas there would be a fee imposed upon the nonconforming airlines.

Do not answer that unless you want to make a response.

Mr. JOHNSTONE. I guess my reaction is what you have done is reverse the positive incentive that we had before some of the bills to a negative incentive. I do not know whether that is better or worse.

Mr. FLORIO. Thank you.

Mr. Santini.

Mr. SANTINI. I was interested in the general observations of Mr. Callison. Would you characterize your observations as representative of the airlines industry, Mr. Callison?

Mr. CALLISON. I really cannot say. I am really speaking only on behalf of Delta Airlines in my testimony.

Mr. SANTINI. Have you had in the course of your interaction with your colleagues on the national level of administration of the airlines industry opportunity to exchange these viewpoints?

Mr. CALLISON. Well, in view of the deregulation and the antitrust law, we have to be very careful about exchanging any kind of views these days. Yes; we have obviously talked about the problem. There was a spectrum of views. There are other carriers than Delta which are complying with FAR 91, carriers which did not begin to comply with it and which are now pinched by time for that and other reasons. So it is a wide spectrum of views. I am speaking only for Delta.

Mr. SANTINI. With regard to your conclusion opposed to any change in FAR 91, I would welcome some expression of opinion, additional expression of opinion from both Mr. Griggs and you, sir.

Mr. Griggs?

Mr. GRIGGS. Yes, Mr. Santini, Mr. Chairman. I have said in my statement that either wipe the whole thing out with respect to two- and three-engine jets, or leave it as it is and do not come in with waivers or what is in the Senate bill, which sort of sets different levels, but that one is not as anticompetitive as the House bill.

I guess the way things are now with time having run, us having already started the program, my seeing no solution to this, not getting rid of the whole thing, I would have to support Delta in the position at this point and leave it the way it is.

Mr. FLORIO. Mr. Johnstone?

Mr. JOHNSTONE. I guess compared to Delta and Northwest, I have a little different position that I have to lead from. It is in the total financial arena. We are not really in a bind for compliance except on an airplane that we do not really see that as doing any good on, namely the DC-9-30. We will miss the January 1, 1983 deadline date by about 3 months. So as far as being anticompetitive, I think it is a bit academic in terms of Eastern vis-a-vis Delta or Northwest.

On the other hand, \$24 million to us, if it is not going to give meaningful relief, has a tremendous leverage on our ability to find new airplanes that do give meaningful relief.

I guess that is a long-winded way around saying that in a sense I agree with them, in terms of let's get it decided one way or the other, so we can go ahead and make our plans. We of course would lean toward some sort of relief from a financial point of view, much more so than would Delta or Northwest, I would suspect.

Mr. SANTINI. Is your position, if it is possible to characterize the posture of the airlines industry in this country, medium to large carrier classification, representative of a larger percentage?

Mr. JOHNSTONE. Basically we would dearly love to get rid of the big fleet of 727-100's we are currently flying around. Neither Delta nor Northwest have that problem to the extent that we have it. The obvious way to replace the 727-100's is with a much more efficient airplane. They are very fuel-inefficient compared to anything else you can buy today. We would prefer to buy—to put our money into buying 757's and taking the noise-complying 727-200's and push them down into our fleet and retire the 727-100's, and that is a path we are definitely committed to.

Our problem is it is also the 100 that we can meet the retrofit rule the fastest, it is a simpler modification, does not require an airplane modification which still leaves us with the DC-9-31 hanging out there and no replacement airplane for it. It would be almost financial suicide to take the 727-100's and say that is what is going to replace the DC-9-30. So in the whole domino process, we tend to want to get the new technology airplanes in the fleet.

Mr. SANTINI. I think that is probably a uniform aspiration of medium and large scale carriers. I am concerned more with trying to get some sort of rough gage of the general state of mind of the medium-large scale industry carriers with respect to the retrofitting two- and three-engine problem.

Mr. JOHNSTONE. Maybe I can do it another way.

If we can spend the \$24 million for Eastern and have compliance in essence by January 1, 1983, we are in a financial position where it appears to us a much better way to spend that \$24 million and the leverage it has in terms of financing additional airplanes to go get new technology airplanes rather than spend the money for relatively little noise benefit. That is our problem. That may be a different problem than Delta and Northwest.

Mr. SANTINI. Again, what I am trying to get to is, to what extent is the Eastern consideration or point of view reflective of the industry and to what extent is the Delta and Northwest point of view reflective?

Mr. JOHNSTONE. I guess I would defer that to the witnesses you had from the Air Transport Association. I am not aware of—

Mr. SANTINI. I did not get a chance to share their testimony, unfortunately.

Mr. JOHNSTONE. I would agree with the gentleman from Delta, I do not think there is a totally unanimous opinion within the ATA as to how this matter should be resolved.

Mr. FLORIO. If you would yield, my recollection of the industry position is closer to Eastern's than it is to the other two conforming quieter airlines.

Mr. GRIGGS. Mr. Chairman, Mr. Santini, you have to recognize this all is based on where you come from.

Mr. SANTINI. Sure.

Mr. GRIGGS. We are all different.

Mr. SANTINI. I do not know where everybody is coming from.

Mr. GRIGGS. Where they are and where there are replacements. There are not replacements for certain airplanes that we have. It is a matter of how do you spend your money, that is quite true. But we in Northwest have come so far that our dollar expenditure to get the rest of the way is very small. If we were to do it in total, it is \$3.4 million. So that makes us look at it differently than Eastern, which is a larger amount. Delta has larger amounts but they come at it from a little different way.

Our industry has had real problems trying to get consensus on this issue. For two years we have had problems with financing mechanisms which almost got through the Congress last year and other things, and they have all been—as I say, you have to start back with the fact that we are all quite different and very competitive.

Mr. FLORIO. Did I understand you to say you did not think there was a replacement aircraft for the DC-9?

Mr. JOHNSTONE. In the total economic picture, we do not think there is a replacement airplane for the DC-9 series 30.

Mr. FLORIO. One of the manufacturers made reference to a DC-9-80.

Mr. JOHNSTONE. That is right.

Mr. FLORIO. That you understand—

Mr. JOHNSTONE. It is a replacement in the sense that it meets stage 3, or stage 2 I guess, of the noise rules.

Mr. FLORIO. Right. Why would it—in what respect would it not be a replacement?

Mr. JOHNSTONE. It is a little bigger airplane but—and I do not know whether I am treading on toes here or not—it is something like 3.5 to 4 times as expensive an airplane. So when you look at the total economic picture and just go out and say I am going to replace a DC-9-30 with DC-9-80, the capital investment to replace that airplane is 3.5 to 4 times what it cost you to buy the DC-9-30.

Mr. FLORIO. Is that a factor peculiar to that airplane or characteristic of all airplanes?

Mr. JOHNSTONE. It is characteristic of all airplanes; 727-200 today is three times as expensive as the original 727.

Mr. FLORIO. All replacement airplanes are going to have larger capital outlays?

Mr. JOHNSTONE. That is right.

Mr. FLORIO. That does not seem persuasive in terms of justifying the statement, "It is not available." It is not available at comparable costs; but nothing is available at that cost.

Mr. JOHNSTONE. The only question is, when you decide to spend that money there is a way to spend it on a more productive and more efficient airplane that still meets all the noise rules. You can debate that between airlines and manufacturers' salesmen, what have you, until you are blue in the face.

Mr. FLORIO. We have had manufacturers say the cost, the expense, of research is such that their market exploration is not

going to be done until there is some certainty in the market. In this bill we are considering, we may be going in the wrong direction to provide them with the incentives to come up with the type of technology that you are talking about.

Mr. JOHNSTONE. You could, but I guess the difficult part is that you tend, in the major carriers, when you play with a DC-9-30 versus DC-9-80, you are playing with the bottom end of our fleet, it is the smallest airplane we operate. You generally tend, with traffic growing and just normal growth, you tend to try to replace the larger airplanes in your fleet first and, as you do that, bring other airplanes, larger ones, down, shoving them down into the system, as I said we would do with the 727-200.

That capital requirement for the larger airplanes puts a burden on you that makes it very difficult to say I am going to spend that much money for the smallest element in my fleet.

Mr. FLORIO. You mentioned something before, if the gentleman would yield further, you missed a 1983 deadline by 3 months. What was that in reference to?

Mr. JOHNSTONE. DC-9-30, to retrofit it and complete it by January 1, 1983. That is the only fleet we would miss and that is primarily because kits from the Douglas Company are not available until March 1981, and then normal production schedule for us would just miss it by a few months. We would have about 95 percent of the fleet in compliance by that time.

Mr. FLORIO. What impact do you see occurring by your missing that? How does that work with regard to this legislation?

Mr. JOHNSTONE. I guess since we have a production plan we would have to go to the Administrator and say we would need a waiver for 3 months.

Mr. FLORIO. Would it not be so also under the existing law? It seems sensible to assume waiver for 3 months would be obtained.

Mr. JOHNSTONE. I am sure it would.

Mr. FLORIO. So in a sense that appears to undermine the argument that has been raised in the course of deliberations on this, that we are going to have people doing silly things economically because of some arbitrary time lines. In fact, if we give the FAA Administrator some minimum degree of good sense of time, he is certainly not going to for periods—relatively short periods—require airlines to retrofit when there is some realistic projection that they will be in a position to comply before too very long.

Someone used the word overkill. I would like to identify with the thought that what this bill represents to a certain extent is legislative overkill. If I could just editorialize for one moment, I feel very deficient in my own ability to perceive much of what everyone has been talking about today and what these legislative initiatives represent is shifting out of the experts' field from FAA over to the legislative process. I am just not sure that is the appropriate place to be dealing with these areas.

Mr. SANTINI. It does seem to me, though, if we are looking at the two- and three-engine airplanes, if we are looking at the cost of \$24 million or \$200 million, it places some responsibility on us to determine if in a rational measurement of cost and benefit this makes sense. And from the chairman's perspective it makes sense to keep in place some inducement to compel compliance with the

noise standard and it is the carrot and stick in place that others have understood to be the rules of the air. Yet even a monumental squanderer like myself cannot appreciate necessarily the wisdom of urinating \$24 million down a rat hole to achieve very little in terms of measured gain from a noise standpoint.

And it is—yet from your standpoint, “Look, we did it,” how in a competitive sense is it fair to them that others should not have to comply? Maybe it represents compounding a mistake, but everybody is living by the same mistake, if it be that. I am not sure.

I am interested in this other arena of concern that you have expressed. On section 303 you characterized Mr. Griggs as legislative overkill and the chairman has emphasized his endorsement of that description I think, and maybe the entire bill. Would the other two gentlemen share in that conclusion with respect to section 303?

Mr. CALLISON. We do not have as strong feeling at Delta about that particular provision as Northwest does. But really, as I said, I think we view the entirety of title III of the House bill as being unnecessary. If it is unnecessary, I think the whole bill is unnecessary at this point in time because the other subjects involved are going to be reviewed in other contexts.

While our viewpoint is a little different, I guess we come out at the same place as Northwest.

Mr. GRIGGS. Going back to what you just stated, Mr. Santini, a few moments ago, the problem, the dilemma our industry faces, I think we can all agree, is that these rules were written in the waning days of the Ford administration, as you may know, the latter part of 1976.

In the introduction, in the statements and all that came with them, statement by Secretary Coleman at that time, he recognized fully that the industry was not going to be able to financially absorb this, that there should and must be some kind of financing mechanism, whatever. That is what began in 1977 a whole series of hearings. So we had good reason to expect that something was going to come along in terms of a financing means.

But meanwhile, along came deregulation and some other things which made most financial schemes sort of meaningless, really, because there no longer was control over fares by CAB or anything to the degree that we had the same fares between the same point. So a lot of things happened. But nevertheless, if you go back to the beginning on this, the dilemma was created by the very introduction of the rule itself, which said this is going to cost a lot of money and some means is going to have to be found to do it. That is why there has been all of this back and forth through all these years.

Mr. SANTINI. Do you have any explicit sentiments you wish to share on section 303.

Mr. JOHNSTONE. I think not.

Mr. SANTINI. How about section 305. I gather Mr. Griggs is not in support with the characterization as most troublesome, night fare, violently anticompetitive.

Do you share in any or all or part of that, Mr. Callison?

Mr. CALLISON. Well, yes, the anticompetitive aspect we did not address, but I do not entirely disagree with what Mr. Griggs has said about that feature of it, and as I said, while it is certainly not as bad as the Senate bill, which would exempt two- and three-

engine aircraft almost entirely from FAR 91, it would seriously dilute the noise which is set forth in the regulation and the problem that local communities have depended on for some time. So we think generally we find it to be undesirable and at least unnecessary at this time, although we don't feel quite as strongly as Northwest does about that particular provision.

Mr. SANTINI. Mr. Johnstone, I would appreciate knowing your sense of section 305, is that the answer to your \$24 million problem?

Mr. JOHNSTONE. No, I don't think so. My \$24 million problem, to go back to it, is a big hunk of that, I think you stated earlier, Mr. Santini, it looks to me like it is money going down a rat hole for no apparent help.

Mr. CALLISON. May I say a couple of words on this point which might help. I am not an acoustical engineer so I don't by any means mean to get off on that. We keep talking about no perceivable result from retrofitting these engines. While there are some perceivable results, there are some decibel changes, you know, even on takeoff, even on side effect, and especially on approach, but there is a broader thing to it than just what the ear can hear. There is the overall physiological, psychological impact of accumulated noise, and that is true in large airports, in small airports to a degree, it is going to be more true in the future at smaller airports.

While I cannot address it in detail, I think the conversation too often loses sight of those things in depth.

Another point I would like to make is we have to keep in mind what is going to happen to these airplanes. Someday they are going to go someplace else, they are not going to be in Delta's fleet, they are not going to be in Eastern's fleet, and the conversation that went on earlier with the manufacturers, I think that there is no airplane under development that meets stage III requirements of the size of the smaller DC-9. Those DC-9's will tend to move down into local service carrier industry and, therefore, out into smaller communities in the years ahead. That has been the pattern in the industry and will be whether or not they are retrofitted. If there are exemptions for them they are going to be around as noisy airplanes for a long time, having this overall impact, physiological, psychological as well as decibel noise problem, so that we have to look at the long range.

We have sold some 50 DC-9's over the years. Virtually every one of them has been sold for domestic use, now flying around this country someplace. The next 44 we sell will meet part 36 noise standards, and I think to that extent, benefit the public. So these things have to be kept in mind.

Mr. FLORIO. It is our understanding from previous witnesses, and previous hearings that were held in Boston and in, I think Minneapolis, where your two lines do operate, that there has to be a perceived sense of improvement objectively measured in terms of less complaints, perceived by FAA and I assume by yourselves, so that the question of objective reductions, whether or not it be in terms of decibels or in terms of aggravation to the airlines and airport operators by virtue of compliance, by virtue of lawsuits, there has been a noticeable change. Are either of you able to address your experience in these two locations or anyplace else?

Mr. GRIGGS. I could, Mr. Chairman. I think you are again in a little bit of apples and oranges. Boston and Minneapolis and St. Paul are not really the same. Boston has some rules which exempt non-FAR-93 complying aircraft from certain times of the day and ask us to achieve a percentage compliance ratio and I believe they have reduced the number of complaints through various actions such as that. Boston is an example of the kind of place that has been referred to such as Los Angeles, which has rules that tie to FAR 36.

If we upset FAR 36 we are going to upset Boston's attempts to try to get at us on the noise issue.

Minneapolis-St. Paul is a different situation, because we, Northwest Airlines, represent over half of the total operations there in that community, and since it is where our people live, the impact of our noise reduction operating procedures is felt there far more than any other place, because we are such a big factor in the total operation there.

We do have local organizations there through which we try to interface with the citizenry and the public and the people in the communities that surround the airport, so they are far more perceptible and know what is going on and have a much better feel of the thing. But other things have been done in Minneapolis-St. Paul by this organization. We have a preferential runway system perhaps second to none. With the full cooperation of the FAA and other people we have been able to direct the traffic over the least populated areas out over the river bottom to a substantial degree and keep it off of the heavily populated South Minneapolis and Highland areas of St. Paul. That has been pretty much a voluntary cooperative effort.

But there aren't fixed rules there as there are in Boston, and in Boston we have fixed rules and I think what they are saying there, we have got to have FAR 36 because that is how we tie to their rules and that is their noise reduction program.

Mr. FLORIO. Thank you.

Mr. SANTINI. I am interested in specific terms in relation to your comments about the procedures that Northwest has implemented without retrofitting or other major cost considerations, to attain a higher level of noise reduction, or lower level, if that is the appropriate description of noise reduction. It seems obvious, it seems simple, as you enunciated, the question that immediately suggests itself to me, why haven't the other airplanes implemented this kind of procedure or practice?

Mr. GRIGGS. Mr. Chairman, I think you will find that over time this is being done by the others. The one thing, we are somewhat a competitive industry, we sometimes use what we call an NIH theory, which is "not invented here." We had somebody very early on in our operation, Captain Paul Soderlind, at the beginning of the time we took our first jets, he decided he was going to make an extensive study on how best to fly them, and his ideas as to the way in which they are flown could well be different from those of some of the other chief pilots in the other airlines, for varying reasons.

The other thing that is implicit in our situation is that we have very stringent rules as to how our pilots fly aircraft, and when

they transfer to jets we say you are going to do it this way and we explain you are going to do it this way, and we give them very detailed material in their manuals as to exactly how we precompute the angle of attack or body deck angle on takeoff. We do lots of things to give the pilot a precise way and he is used to doing it our way.

This is not to derogate anybody else's way of doing things but we had a happy marriage of having a very procedurally oriented group of pilots who learn to follow our procedures, a man who cared enough in the very beginning to develop and teach those procedures, and a system where we found that we were saving fuel at the same time we were reducing noise, and all of these things happily work together.

Now, the rest of the industry, it appears to me, through ATA and through FAA's advisory circulars which all is now in the same posture and coming to those same procedures. But there is a little problem with in some cases, teaching an old dog new tricks. The pilots in some of the other airlines haven't been used to doing things the way our people do them and they haven't been taught from day 1 this is the way it is, so it is going to take time.

Mr. SANTINI. Is there anything legislatively that needs to be done to arrive at a point of one-half the noise exposure for one-half the time or duration?

Mr. GRIGGS. Well, that is—

Mr. SANTINI. That would seem to me to suggest legislative action.

Mr. GRIGGS. That is FAA data. I am sure they and everyone involved is going to get to the bottom of what it really says on how you get there. Part of the problem is this matter of for a long time, people had a technical difference between whether you should get the flaps up right away or whether you should go on with the noise reduction before you pull in your flaps and slats. I think now there is general agreement early flap retraction is the answer both for fuel and noise. But some of the early technical papers and such on this subject said other things, and there was a great deal of variance of opinion of people.

Now the facts are out, the numbers are there, if we concentrate on areas beyond the FAR 36 measuring point, as that study does, I think you can see the effect out where there are substantial numbers of people on the ground and this thing will work itself out.

Mr. SANTINI. I hope you are right.

Finally, on page 7 of your testimony, Mr. Callison, you alluded to a kind of recurrent theme of concern, and that is the Senate bill would endanger this cooperative effort and undoubtedly provoke a series of individually uncoordinated local noise control actions around the country, a situation which could be resolved only by the assertion of Federal preemption.

The chairman alluded to the individual experiences in Los Angeles County. I think there was another case of some considerable importance in dealing with this general problem area. With your very able counsel present, I would like to broach what seemed to me as an obvious legal rejoinder to this expression of concern, and that is that it represents a significant encroachment upon interstate commerce. It would be in violation of the Constitution given that extreme circumstance that you have depicted there and, there-

fore, those kinds of ordinances or local laws would have to fly in the face of the interstate commerce clause, and I would be interested to get any of your experience in the area or judgment.

Mr. CALLISON. I can assure you that we espouse that theory in arguing against local operational restrictions but at the same time that you have that interstate commerce clause and the protection for interstate commerce, which the Constitution creates, you also have a pretty clear doctrine of law which says the local airport operator has proprietary rights to operate that airport and impose reasonable rules and regulations which will permit him to do so in accordance to the wishes of his community and in the interest of safety itself.

Those two things come into conflict. And while you have the interstate argument, the only way you would resolve it would be through years and years of litigation, and that is exactly the road we were headed down until part 36 and part 91 came along. We were headed down that road in Los Angeles. I am sure we would have been headed down it in other locations.

The promulgation of part 36 and the promulgation of part 91 has quieted down that problem, has put the litigation into abatement for the time being, but the principles aren't that clear, and it would result in, I am afraid, very costly, lengthy litigation and hurt the public in the process.

Mr. SANTINI. Would you have any supplemental thoughts on that?

Mr. MAYO. Mr. Santini, we have been in a dialog with the DOT and FAA for a number of years, going back into the late sixties on the issue of Federal preemption. The carriers, of course, jointly have been involved in this dialog in seeking Federal preemption in the field of local controls on operations, whether they be related to noise or otherwise, but primarily in the noise area. We have been unsuccessful. Neither FAA nor the DOT have been willing to assert Federal preemption generally in the field of noise control or operational techniques at the airports, and in fact, we were disappointed in the fall of 1976 when DOT and FAA came out with their noise abatement policy since in that document they, in fact, encouraged a number of local initiatives which we were afraid would be uncoordinated.

We really do not have a clarification in this field, and we still are struggling to obtain Federal preemption. Under the Noise Policy Act as it is now, DOT and FAA, they have stated to us that they will assist us in the argument of undue burden on interstate commerce, but they are pretty much refusing to get involved in the preemption argument. We are having to argue preemption very much alone in the litigation that we have had in California. We have been successful in some, and unsuccessful in some. But in light of the fact that DOT and FAA have in fact at times encouraged local curfews, restrictions on type of aircraft, things of that type, we are not very hopeful at the moment of getting the type of Federal preemption that we feel very strongly needs to be asserted.

Mr. CALLISON. Let me add a footnote. There are obviously two parts of preemption debate. I was answering your question on the basis that the actions that you thought, the actions by the local communities without a Federal legislative preemption, the actions

by the communities themselves would violate the interstate commerce clause, and that is one that you get in endless litigation.

The other piece is if the Federal Government were to pass legislation preempting this whole field it would help clarify the issue, but as Mr. Mayo says, there has been little interest on the part of the Federal Government in doing that.

Mr. MAYO. I might add one thing. In the Air Control Act of 1971, I think it was, we obtained Federal preemption in control of the emissions of jet engines. In the field of noise, at the moment, FAA and DOT have stated that they in fact have the authority to assert Federal preemption but that they will assert it. We could do it by legislation, but I think you might have some difficulty in getting it passed.

Our feeling is at some point perhaps DOT and FAA will come over and say that now is the time that, in this area of noise control, we do need Federal preemption and control.

Mr. SANTINI. To the contrary, it seems to me on the preemption front, the expressed enunciation on the part of the Federal regulatory entity they are declining to assert it and you suggested inviting it.

Mr. MAYO. That is causing us a problem.

Mr. SANTINI. At the very least it is an unclear preemption.

Mr. MAYO. We are having to rely now more on the undue burden on interstate commerce argument than we are on Federal preemption.

Mr. GRIGGS. I might add the bottom line here is that everybody is afraid of being sued. That is simply what seems to direct these things.

Mr. FLORIO. It just seems to me that the passing of the legislation we are discussing, be it in the Senate or Public Works Committee, is certainly going to send legislative signals out that the Federal Government is removing itself even more from the field making preemption arguments less persuasive than they are now. We have experienced a different field, different area, DOT has and the appropriate agencies, the Transportation Board is charged with the responsibility of coming up with regulations specifying what the system shall be for transporting hazardous materials, one being radioactive materials.

They have not done so, and the city of New York has enacted an ordinance prohibiting the transportation of those materials, and in the litigation the court has said that in the absence of a Federal regulatory scheme there is nothing to preclude the transportation of those materials being prohibited.

You can see that this opens the door for many different problems, such as every town passing an ordinance. Therefore, this committee has tried to induce the Department of Transportation, to enact regulatory schemes to effectively preclude having a town-by-town policy on whether or not we are going to transport nuclear materials through towns.

I think the situation is roughly comparable in terms of the void that is already in existence that would be accelerated by virtue of the passage of this legislation, resulting in a town-by-town policy of what we should do with operations of airport procedures relative to noise.

Mr. SANTINI. I think the chairman's point is well taken. I appreciate the response of all you gentlemen. Thank you.

Mr. FLORIO. Gentlemen, we thank you very much for your help. [The following statement was received for the record:]

STATEMENT OF MRS. HELEN CROSIER, MADISON, N.J.

I am Helen Crosier of Madison, New Jersey.

I represent myself as a private, concerned citizen; the Mayor of Madison, New Jersey; the citizen's Coalition Against Airport Pollution (CAP); and the Intermunicipal Airport Committee (IMAC) comprising the Mayor of five impacted communities adjacent to Morristown Municipal Airport.

The explanation for all this activity to protect our environment is simple. Our residential areas, some dating back to colonial times, have been bombarded with increasing aircraft noise since the 1973 Supreme Court Burbank Decision. When the Supreme Court ruled 5 to 4 that municipalities could not enact a local curfew on jet flights at their airports in an effort to control noise, control was preempted by the Federal Government. Consequently we lost the existing protection of a court imposed curfew.

My objections to the legislation being considered by the Committee is that the proposed legislation provides for waivers of the retrofit/replacement provisions. Also it would grant further waivers allowing the continued use of noisy aircraft into the late 1980's if the airlines have signed contracts for the purchase of new equipment.

I am opposed to any relaxation of noise abatement standards or regulations which could adversely affect the public. The purpose of the FAA rules is to protect the public from the continuing harm of aircraft noise exposure.

With our current technology there are not many effective ways to abate and reduce airport noise. Some that are available to the airport operators and the surrounding communities are:

- Briefly:
- 1) flight paths can be adjusted to avoid excessive noise levels over residential areas. However, safety considerations must also be considered. At Morristown shifting the flight path merely shifted high intensity noise to another residential area.
 - 2) curfews can be imposed by the airport operator. This may produce controversial and economic implications.
 - 3) land acquisition in impacted areas is sometimes possible, although a costly alternative.
 - 4) the acoustical insulation of buildings has been suggested. We may be forced to live behind double-oak doors, windowless sound-absorbent walls, heavy concrete construction in the future. But how does one insulate a quiet bedroom open to the benefit of fresh air? How does one enjoy patio entertaining?

I conclude that one of the major airport noise reduction remedies is quieter aircraft. If this protection is removed by waiver provisions, what remedy does the general public have to preserve its environment? The objectionable noise is created by the aircraft itself.

In conclusion, Mr. Florio, an estimated six million people are severely impacted by aircraft noise in our country. In my opinion these waiver provisions will set the airport noise program back 20 years.

I would like to paint a picture of what our local community has experienced since losing the noise abatement curfew in 1973. Living under the flight path within a control zone, low flying jets interfere with outdoor activities, severely interrupts classroom instruction in our schools and three colleges. With windows open the enjoyment of television, radio, and music is jeopardized. Telephone conversations are drowned out during fly overs. Irregular but frequent nighttime flights interrupt sleep at night. It is startling to be awakened with a jet roar as loud as thunder.

I have spent almost two years in familiarizing myself with airport problems and solutions. I am prepared to answer questions about Morristown Airport.

I urge you not to let this legislation go forward and become law and hence further deprive the millions of people impacted by airport noise of what little privacy remains for them in their daily lives.

For brevity of time, I would like to submit additional materials I have brought to this hearing in written form. Namely, letters and statements submitted to me by other concerned citizens; and a more technical report of high noise levels surrounding a suburban New Jersey airport.

Mr. Chairman, this concludes my formal statement. I would like to have these materials made part of my formal testimony here today. Thank you.

Protest

"Washington Slept Here. Can You?"

HANOVER TWP. — More than 200 persons marched on Morristown Airport yesterday afternoon to protest noise and the expansion of airport operations.

Billed "Operation Mayday" by its organizers, the march attracted demonstrators from the Hanovers, Florham Park, Madison and Morris Township.

The march was spurred by Colonial Airlines' application now before the Civil Aeronautics Board to run shuttle flights from Morristown to Boston and Washington. But annoyance with present aircraft noise and fears that the airport will expand into a commercial facility motivated many demonstrators.

"George Washington Slept Here. Can You?" asked the sign one marcher carried.

March leader Alice Anderson of Hanover, said she will use the march to launch a new organization, the Coalition Against Airport Pollution (CAP), whose purpose will be to put a "cap" on airport noise.

The march attracted a variety of community activists from towns surrounding Morristown Airport. Several local politicians, including Hanover Mayor Saverio Iannaccone and East Hanover Committeemen Joseph Russo and George Tomko, took part in the march.

About six nuns from the Sisters of Charity convent, who complained that aircraft make turns around the College of St. Elizabeth dome, were among the marchers.

And some residents of the Cromwell Hills area of Morris Township, who are fighting the construction of a new Route 24, also joined in the protest.

The march began about 1:30 p.m. from three locations — Ely's Aquatic Farm on Columbia Turnpike, the Sisters of Charity convent on Park Avenue and the Park Avenue pollution control site — and converged on the airport road leading to Columbia Turnpike.

Walter Glynn of Morristown met the demonstrators with handbills calling for regionalization of the airport. The airport is an attraction to the businesses that have moved to Morris County, his handbill said, and all the towns benefitting from the airport should help pay the costs of maintaining it.

The marchers had intended to take their demonstration into the airport itself, but police barricades, set up along the airport road, stopped them before they reached airport buildings and runways. Cars were allowed in the airport but not persons on foot, police said.

Airport manager Robert McGovern said he requested the po-

lice barricades "on the advice of counsel." "Safety is the foremost word," he said.

Relations between marchers and the dozen Hanover police posted along the barricade generally were amicable. "I'm only doing my job. I take no sides," Chief Harry Hominuk said. "It's very unfortunate that I have to get bound between this." But the barricades angered some marchers.

Franz Konrad of East Hanover stood defiantly in front of a yellow Cadillac which was making its way out of the airport. The driver honked at him. Konrad crouched down by the grill of the car. Eight cars leaving the airport backed up behind the Cadillac.

"Push me over," Konrad said. To a policeman he said, "He (the driver) hit me."

A chorus of angry women yelled at the driver from the side of the road.

After the car was allowed to pass Konrad was still angry. "He pushed me with his car," he said. "I'm going to file a complaint."

Steven Newmark, also of East Hanover, was taken by police to a squad car after he sat down in the middle of the road. He was released after he promised not to do it again.

Some marchers, including the nuns, made their way back to their cars and drove into the airport with their horns blaring and their signs pointed out the car windows.

"You surprise me Sister," Hominuk said to Sister Eileen Dolan, the driver of one of the cars.

Story By Alan Bavley
Photos By Mike Grant



OPERATION
MAYDAY

Morris County Aviation Commission

Court House
Morristown, New Jersey 07960

September 28, 1977

To Concerned Residents:

A late thank you for your assistance in reporting airplane noise complaints to our fellow Commissioner Alice Anderson. As you may know, Morristown Airport is a municipal airport and is the direct responsibility of the Town of Morristown, its elected officials and its municipal airport commission.

Your complaints, giving the proper dates and times will enable our Commission to identify a pattern of noise abuse such that we can bring this information to the attention of municipal, state and federal officials. Furthermore, our Commission may use its limited influence, in some cases, to meet with any commercial or corporate users of aircraft to tell them of your complaints. Perhaps in this way, our Commission can influence their flight times and patterns in the future to your benefit.

Please direct any further written complaints to my attention, realizing that our Commission's role is limited and that our efforts may possibly alert local, state and federal officials of your concerns.

Sincerely,


Thomas O'Brien, Chairman
Morris County Aviation Commission



TOWNSHIP OF EAST HANOVER

411 RIDGEDALE AVENUE
EAST HANOVER, N. J. 07936

TELEPHONE 887-5454

June 5, 1979

America promises domestic tranquillity. Domestic means home, and tranquillity means peace and quiet. It seems now that our Congress, elected by the people of the United States of America is proposing to take away through Bills HR3942 and S413 that peace and quiet to which its constituents are entitled.

But why? Evidently, the waiver of noise abatement and noise control is supportive of the aviation industry at the expense of the people. These bills would permit commercial aviation to expand at much lower cost, at the sacrifice of the environment, and the expense of the people who are subject to that environment. How much must we give up for profit? Besides this new benefit the Congress is prepared to give to commercial aviation, there already exists the financial benefits of investment tax credit and federal grants. We the people already pay out of our tax pocket and now our legislators want us to pay with our eardrums.

This legislation is designed to foster the expansion of commercial aviation for transportation. We, in Morris County, as a matter of fact, in the State of New Jersey, do not need the expansion of commercial aviation as a means of satisfaction of our transportation needs. Newark Airport, is a fine airport, that is nowhere near its capacity. South Jersey is serviced by Philadelphia, which is another major airport. What New Jersey, Morris County, and all of New Jersey counties, need, is mass ground transportation, and seems with regard the energy shortage, that this priority is absolutely critical. We put environmental controls on ground transportation at a high cost. Why then, must we decontrol aviation and relinquish noise abatement when aviation, in its wildest dreams, cannot satisfy the problems of mass transportation and will only benefit, if any, a select few?

9

The aircraft noise levels are intolerable now. New Jersey is the densest state in the United States, probably more dense than Japan in people per square mile. To relieve noise controls and to waive noise abatement at commercial airports is unconscionable to the welfare of the people of New Jersey as well as to the people of any other state. The noise concessions portend on expansion of commercial aviation with substandard aircraft and it must follow that the concerns for physical safety will also diminish.

We ask you, your people, ask you, we implore you; do not sentence us to twenty years of noise and enslavement. Make aviation toe the mark in noise control and abatement now, before commercial aviation expands and destroys the limited peace and quiet we enjoy now. Do something to benefit us. Spend our money for mass ground transportation which we surely need now. And, above all, save our ears so we can continue to enjoy a quiet, peaceful life and continue to hear your political speeches.

Respectfully submitted,

TOWNSHIP OF EAST HANOVER

George M. Tomko

George M. Tomko
Committeeman

College of Saint Elizabeth



Convent Station, New Jersey 07961 (201) 539-1600

June 4, 1979

Dear Mrs. Crosier,

Pursuant to our telephone conversation this morning I am writing to ask you to represent my concern about the noise and danger of low-flying planes using Morristown Airport.

As a private citizen, I have been terrified many times as a plane flew dangerously close to the Administration Building tower, which is about thirty feet from my window on the fifth floor of the convent area.

As a College Professor ^{of} Music, I have been unable to hear live or recorded or radio music for as long as a minute while a deafening jet noise drowns out all else. If the students are at a lecture, the professor can pause and wait until the jet noise abates, but with music, this is impossible because the music has gone and there is no way of getting back the portion missed.

My students have been terrified in the dormitory (O'Connor Hall), which is situated at the crest of the hill overlooking the airport - the planes are so close at times that the girls can see the pilot! One student told me in May that she and another student grabbed each other and said, "This plane is going to hit us. This is it!" The plane was perilously close to hitting the dormitory.

Last evening, June 3, between 10:30 and 11:00 p.m., there was a deafening roar from what seemed to be a jet as it gained altitude from the airport, flying over the convent. This morning, June 4, I was listening to the early morning news around seven a.m. when a plane flew out of the airport and over our tower. For fully a minute I could not hear my radio, which was less than ten inches away from me. The sound was deafening.

In an area like this - with three institutions of higher learning within a mile or so - this noise constitutes a genuinely serious problem. Drew University, Fairleigh Dickinson University, and the College of Saint Elizabeth educate thousands of students whose safety and learning are being jeopardized by lack of concern on the part of the persons directing the airport traffic.

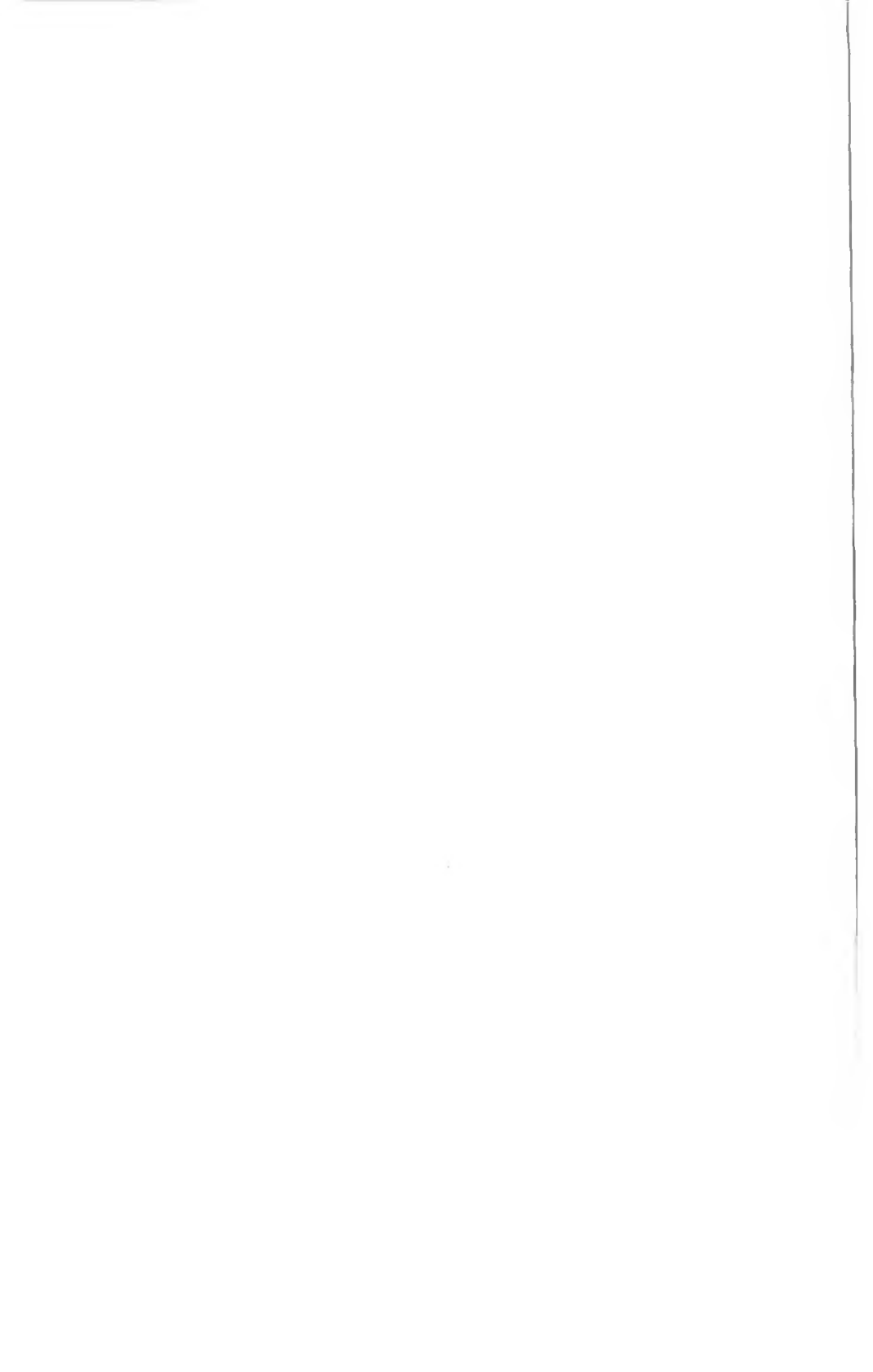
I have telephoned the airport tower many times after having been terrified by low-flying planes. At times I have been answered rudely; many times I have been put off; once a very polite gentleman said, "I know just who that pilot is and you are right: he has been crazy for lo!"

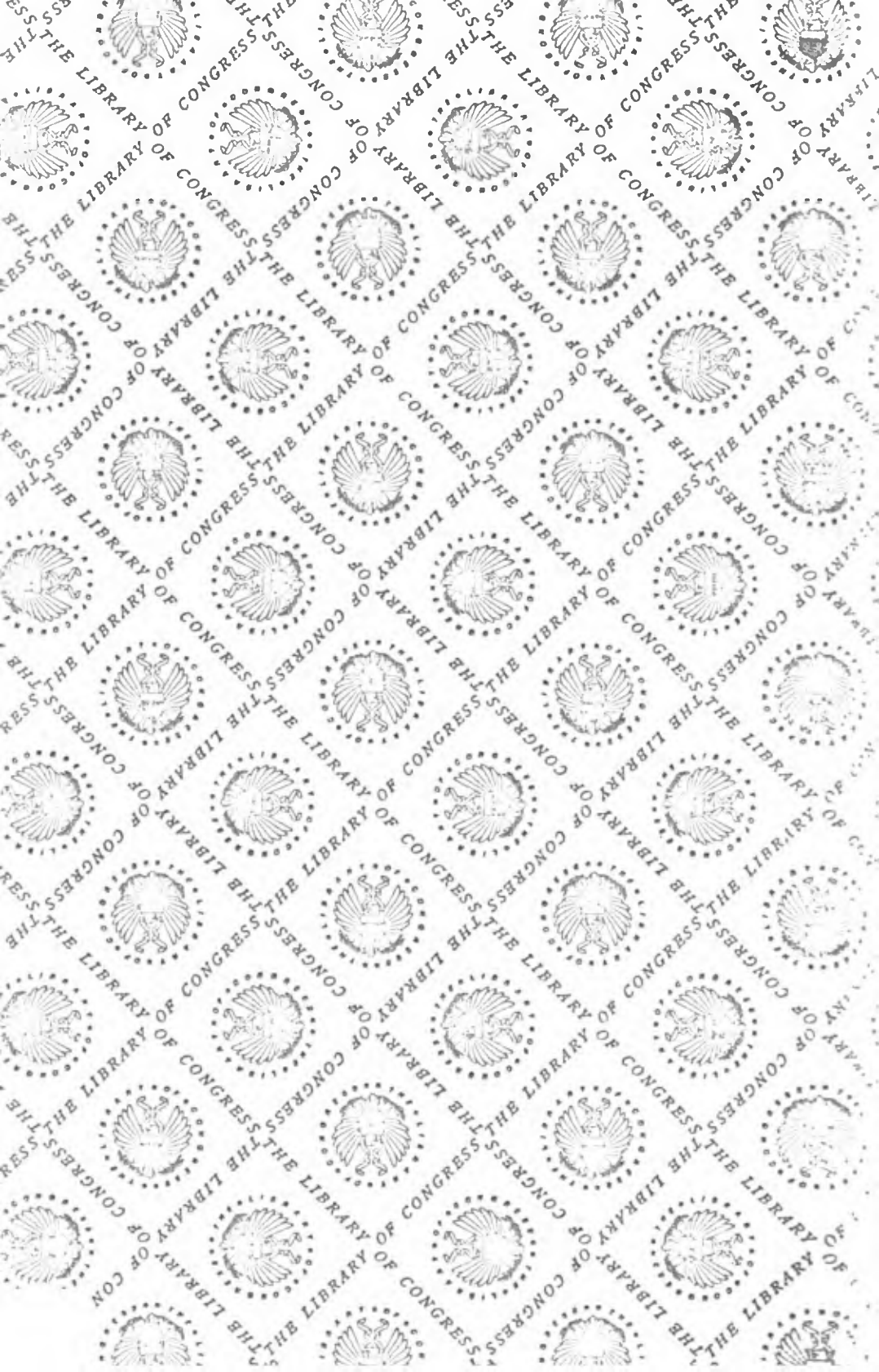
Please God, something will be done before one of these planes crashes into one of our buildings housing hundreds of students and sisters. Let us hope and pray that it will not take a tragedy to insure safety and noise control. Thank you for representing me in this area of grave concern.

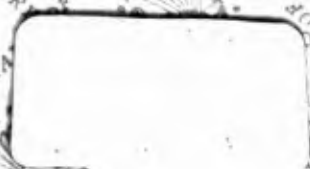
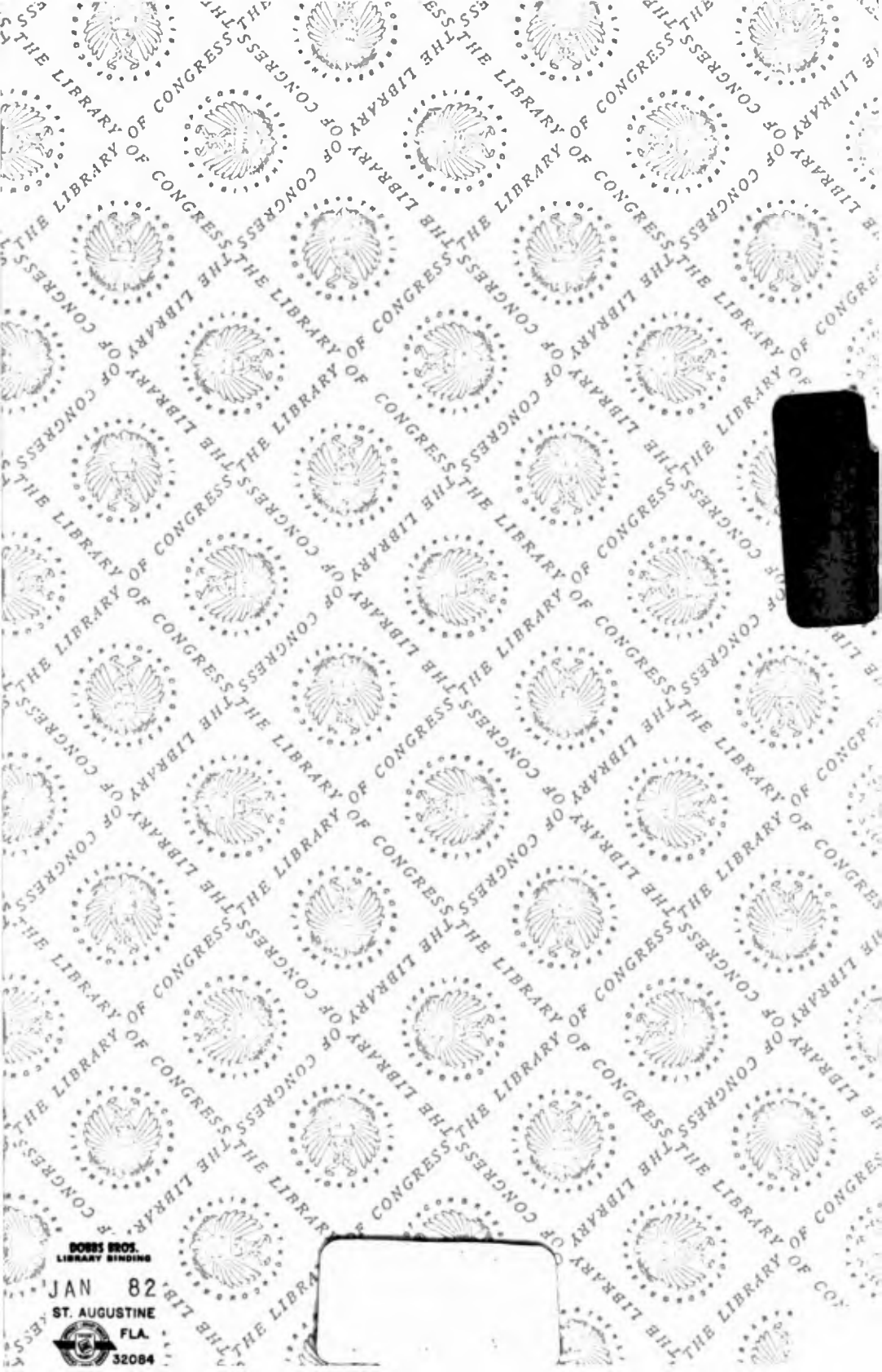
Sincerely yours,
Sister Eileen Dolan
 Sister Eileen Dolan, S.C.

[Whereupon, at 2:20 p.m., the subcommittee adjourned.]

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